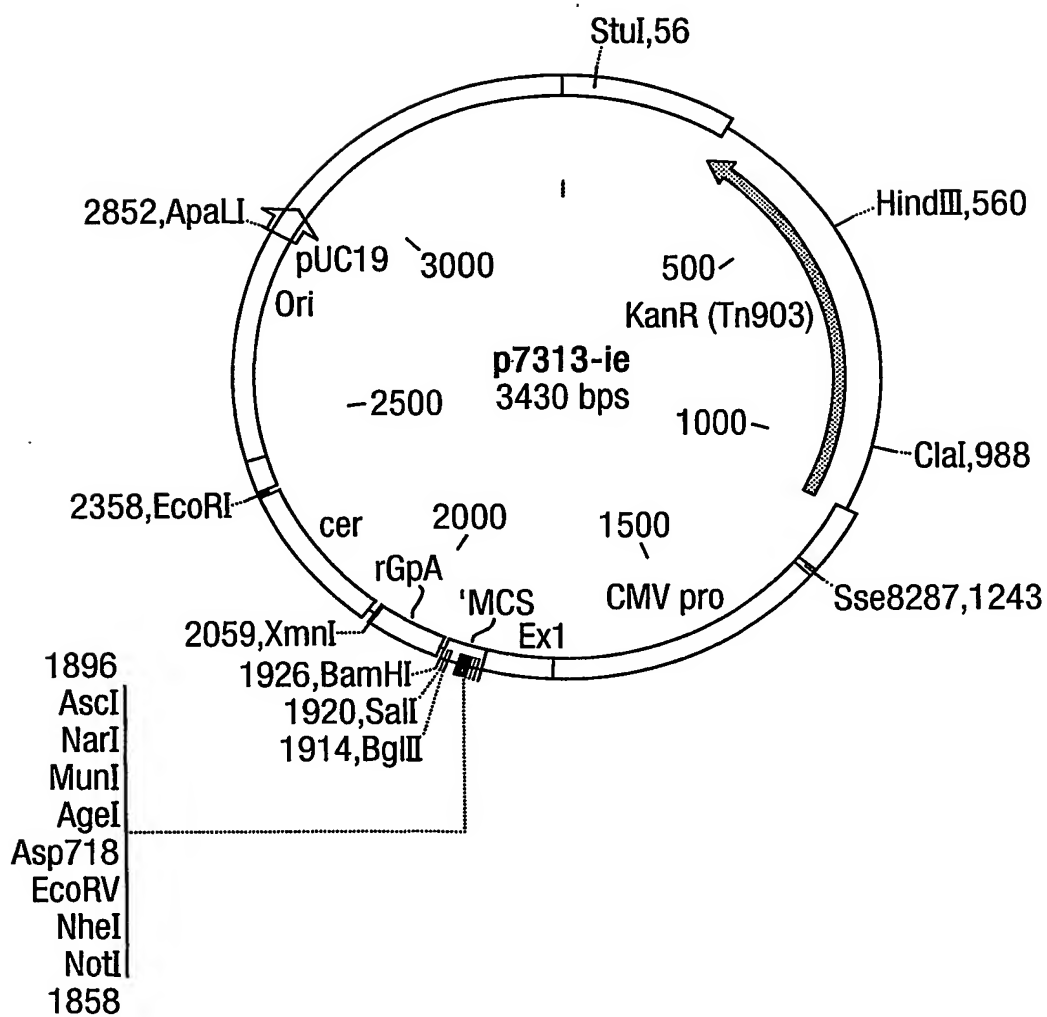


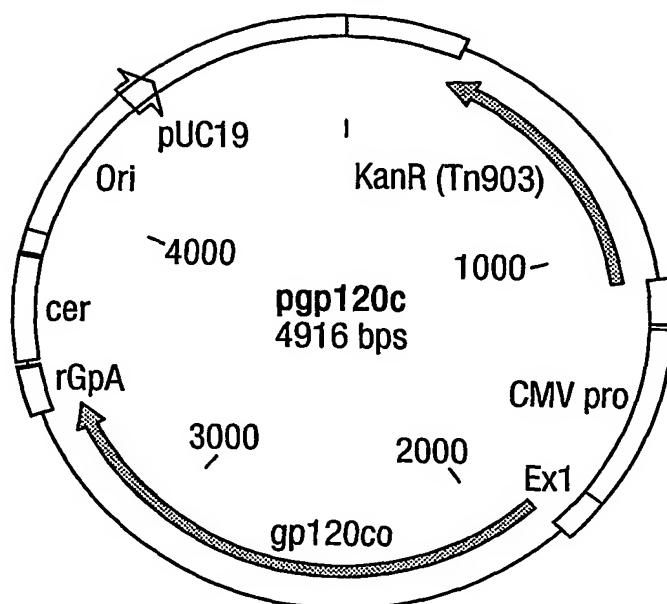
Fig.1.



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Fig.2.

Map of ppg 120c:



The amino acid sequence of the W61D gp120 is below. The signal sequence is underlined and bold, up to the predicted cleavage site between amino acids 29 and 30. This is the sequence removed in dsgr120 (pRix12 etc).

MKVKE TRKNYQHLWRWGTMLLGLMICSAAEQLWVTVYYGVPVWKEATTTLFCASDAKAYDTEVHNVWATH
ACVPTDPNPQEVVLGNVTEYFNMWKNMVDQMHEDIISLWDQSLKPCVKLTPLCVTLDCDDVNTNSTTTT
SNGWTGEIRKGEIKNCSFNITTSIRDKVQKEYALFYNLDVVPIDDDNATTKNKTRNFRLIHCNSSVMTQA
CPKVSFEPIPIHYCAPAGFAILKCNKTFDGGKGLCTNVSTVQCTHGIRPVVSTQLLNGSLAEEVVIRSD
NFMNDNTKTIIVQLNESVAINCTRPNNNTRKGIHIGPGRAFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVI
KLREHFGNKTIKFNQSSGGDPEIVRHSFNCGGEFFYCDTTQLENSTWNGTEGNNTEGNSTITLPCRICKQII
NMWQEVGKAMYAPPIGGQIRCSSNITGLLLTRDGGTEGNGTENETEIFRPGGGDMRDNRSELYKYKVVKV
EPLGVAPTRAKRRRVQR [SEQ ID NO: 49]

The codon optimised DNA sequence for the W61D gp120 gene is:

ATGAAGGTCAAGGAGACCAGAAAGAACTACCAGCATCTGTGGCGCTGGGGCACCATGCTCCTGGGAATGCT
GATGATCTGCTCCGCCGCCGAGCAGCTGTGGGTACCGTCTACTACGGCGTGCCTGTGTGGAAGGAGGCCA
CGACCACCTCTTCTGCGCGAGCGACGCCAAGGCCCTACGACACGGAAGTGCATAACGTGTGGCGACGCAT
GCTTGCGTGCTTACGGACCCCAACCCCAAGGAGGTGGTGTGGGAAACGTGACCGAGTACTTCAACATGTG
GAAGAATAACATGGTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCAGTCCCTGAAGCCCTGCG
TGAAGCTGACGCTCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACC
AGCAACGGCTGGACCGGAGAGATTCGGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCAGACCTCGAT
CAGAGACAAGGTGCAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATG
CCACCACCAAGAACAAGACGACGCGTAATTTAGACTCATTCACTGCAACAGCAGCGTCATGACGCAGGCC
TGCCCCAAGGTGTCTTTCGAACCAATCCCAGTCCATTACTGTGCCCTGCCGATTTCGCGATCCTCAAGTG
TAACAACAAGACCTTCGACGGGAAGGGCCTGTGCACCAACGTGACGACGGTGCAGTGCACCCATGGCATCC

Fig.2 (Cont).

GCCCCGTCGTGAGCACCCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGATCCGGTCGGAC
 AACTTCATGGACAACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAAGTGTACCCGGCC
 TAACAACAACACCCGTAAGGGCATCCACATCGGGCCTGGACGGGCCTTCTATGCCGCCCCGAAGATCATCG
 GCGACATCCGGCAGGCCCATTGCAACCTCTCCCGCGCCCAGTGGAATAACACCCTGAAGCAGATCGTGATC
 AAGCTGAGAGAGCACTTTGGAAACAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCCGAGATCGT
 GCGGCACTCCTTCAACTGCGGGGGCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGA
 ACGGCACCGAGGGCAACAACACAGAGGGAACTCCACTATCACCCTCCCTTGCCGCATCAAGCAGATCATC
 AACATGTGGCAGGAGGTGGGAAAGGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAA
 CATCACC GGCCCTGCTGCTCACCAGAGACGGGGGCACCCGAGGGCAACGGCACGGAGAACGAGACGGAGATCT
 TCAGGCCCCGGCGGCGGCGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTG
 GAGCCGCTCGGCGTGGCCCCCACC CGGGCCAAGCGCCGCGTCGTGCAGAGATGA [SEQ ID NO: 50]

Fig.3.

Map of pRix15244:

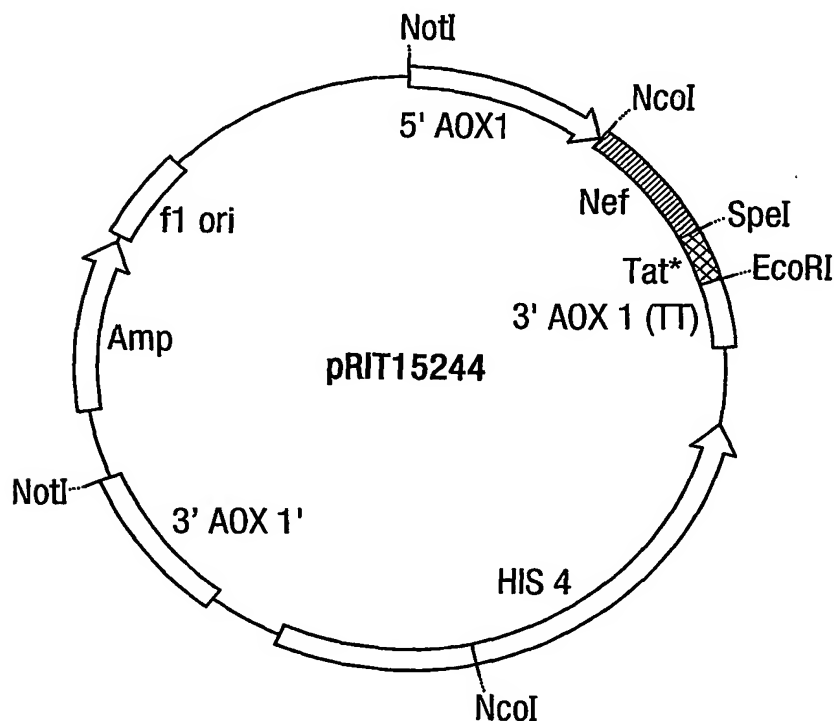
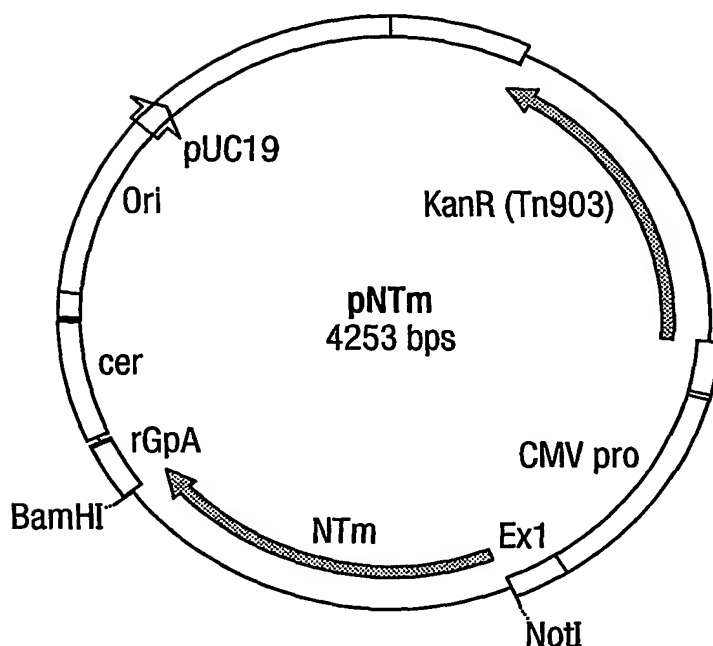


Fig.4.

Plasmid pNTm:



Sequence of insert:

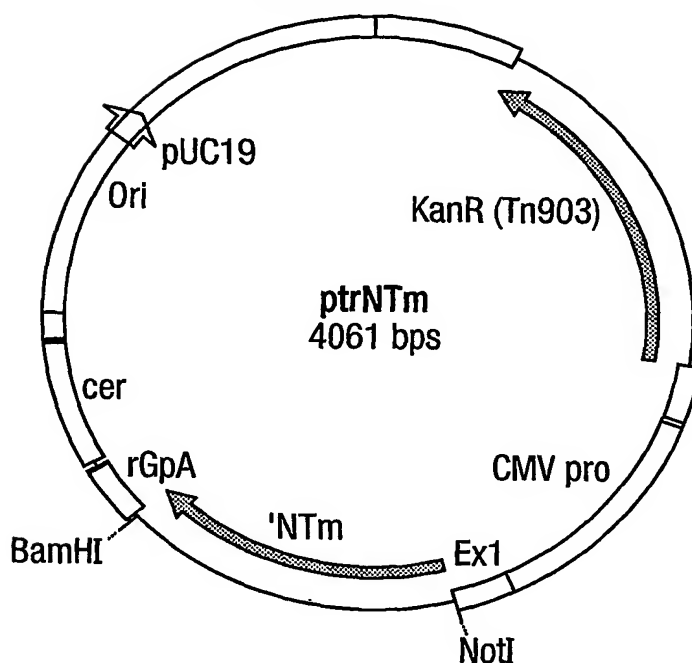
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 GCCAGCAGCAGATGGGGTGGGAGCAGCATCTCGAGACCTGGAAAAACATGGAGCAATCACAAGTAGCAATA
 CAGCAGCTACCAATGCTGCTTGTGCCTGGCTAGAAGCACAAGAGGAGGAGGTGGGTTTCCAGTCACA
 CCTCAGGTACCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTTAAAGAAAAGGG
 GGGACTGGAAGGGCTAATTCACCTCCCAACGAAGACAAGATATCCTTGATCTGTGGATCTACCACACACAAG
 GCTACTTCCCTGATTGGCAGAACTACACACCAGGGCCAGGGGTCAGATATCCACTGACCTTTGGATGGTGC
 TACAAGCTAGTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGTTACA
 CCCTGTGAGCCTGCATGGAATGGATGACCTGAGAGAGAAGTGTTAGAGTGGAGGTTTGACAGCCGCCTAG
 CATTTTCATCACGTGGCCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGCACTAGTGAGCCAGTAGATCCT
 AGACTAGAGCCCTGGAAGCATCCAGGAAGTCAGCCTAAACTGCTTGTACCAATTGCTATTGTAAAAAGTG
 TTGCTTTTCATTGCCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGGAGAC
 AGCGACGAAGACCTCCTCAAGGCAGTCAGACTCATCAAGTTTCTCTATCAAAGCAACCCACCTCCCAATCC
 AAAGGGGAGCCGACAGGCCCGAAGGAATAA [SEQ ID NO: 51]

Amino acid sequence of antigen:

MGGKWSKSSVVGWPTVRERMRRRAEPAADGVGAASRDLEKHGAITSSNTAATNAACAWLEAQEE
 EEVGFPVTPQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDLDWIYHTQGYFPDWQNYT
 PPGVRYPLTFGWICYKLVPVEPDKVEEANKGENTSLLHPVSLHGMDDPEREVLEWRFD SRLAFH
 HVARELHPEYFKNCTSEPVDPRLEPWKHPGSQPKTACTNCYCKKCCFHCQVCFITAAALGISYGRK
 KRRQRRRPPQGSQTHQVSLSKQPTSQSKGEPTGPKE [SEQ ID NO: 52]

Fig.5.

Plasmid ptrNTm:



Sequence of insert:

ATGGTGGGTTTTCCAGTCACACCTCAGGTACCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAG
 CCACTTTTTTAAAAGAAAAGGGGGGACTGGAAGGGCTAATTCACCTCCCAACGAAGACAAGATATCCTTGATC
 TGTGGATCTACCACACACAAGGCTACTTCCCTGATTGGCAGAACTACACACCAGGGCCAGGGGTCAGATAT
 CCACTGACCTTTGGATGGTGCTACAAGCTAGTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGG
 AGAGAACACCAGCTTGTTACACCCTGTGAGCCTGCATGGAATGGATGACCCTGAGAGAGAAGTGTTAGAGT
 GGAGGTTTGACAGCCGCTAGCATTTTCATCACGTGGCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGC
 ACTAGTGAGCCAGTAGATCCTAGACTAGAGCCCTGGAAGCATCCAGGAAGTCAGCCTAAAAGCTGCTTGATC
 CAATTGCTATTGTAAAAAGTGTTGCTTTTCATTGCCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCT
 ATGGCAGGAAGAAGCGGAGACAGCGACGAAGACCTCCTCAAGGCAGTCAGACTCATCAAGTTTCTCTATCA
 AAGCAACCCACCTCCCAATCCAAAGGGGAGCCGACAGGCCCGAAGGAATAA [SEQ ID NO: 53]

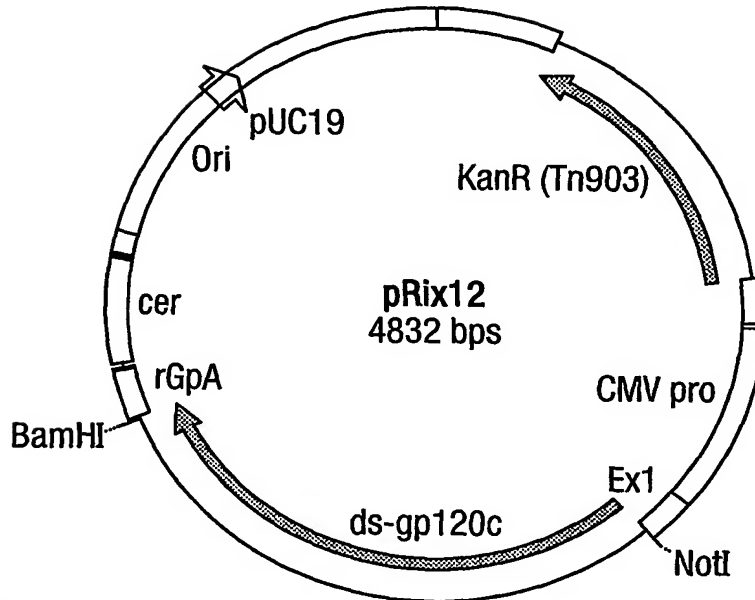
Amino acid sequence of antigen:

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 PLTFGWCYKLVPEPDKVEEANKGENTSLHLPVSLHGMDDPEREVLEWRFD SRLAFHHVARELHPEYFKNC
 TSEPVDPRLEPWKHPGSQPKTACTNCYCKKCCFHCQVCFITAALGISYGRKKRRQRRRPPQGSQTHQVSLS
 KQPTSQSKGEPTGPKE [SEQ ID NO: 54]

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Fig.6.

Plasmid pRix12:



Sequence of insert:

ATGGCCGAGCAGCTGTGGGTCACCGTCTACTACGGCGTGCCTGTGTGGAAGGAGGCCACGACCACCCTCTT
 CTGCGCGAGCGACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCATGCTTGCCTGCCTA
 CGGACCCCAACCCCAAGGAGGTGGTGTGGGAAACGTGACCGAGTACTTCAACATGTGGAAGAATAACATG
 GTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCAGTCCCTGAAGCCCTGCGTGAAGCTGACGCC
 TCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACCAGCAACGGCTGGA
 CCGGAGAGATTCGGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCAGCACCTCGATCAGAGACAAGGTG
 CAGAAGGAATACGCGCTGTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATGCCACCACCAAGAA
 CAAGACGACGCGTAATTTACAGACTCATTCACTGCAACAGCAGCGTCATGACGCAGGCCTGCCCAAGGTGT
 CCTTCGAACCAATCCCGATCCATTACTGTGCCCTGCCGATTCGCGATCCTCAAGTGTAACAACAAGACC
 TTCGACGGGAAGGGCCTGTGCACCAACGTGACGACGGTGCAGTGCACCCATGGCATCCGCCCCGTGCTGAG
 CACCCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGATCCGGTCCGACAACTTCATGGACA
 ACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAAGTGTACCCGGCCTAACACAACACC
 CGTAAGGGCATCCACATCGGGCCTGGACGGCCTTCTATGCCGCCCGCAAGATCATCGGGCAGATCCGGCA
 GGCCCATTGCAACCTCTCCCGCGCCAGTGGAAATAACACCTTGAAGCAGATCGTGATCAAGCTGAGAGAGC
 ACTTTGGAACAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCGAGATCGTGCGGCACTCCTTC
 AACTGCCGGGGCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGAACGGCACCGAGGG
 CAACAACACAGAGGGAACTCCACTATCACCTCCCTTGCCGCATCAAGCAGATCATCAACATGTGGCAGG
 AGGTGGGAAAGGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAACATCACCGGCCTG
 CTGCTCACCAGAGACGGGGGCACCGAGGGCAACGGCACGGAGAACGAGACGGAGATCTTCAGGCCCGGGCG
 CGGCGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTGGAGCCGCTCGGCG
 TGGCCCCACCCGGGCAAGCGCCGCTCGTGACAGATGA [SEQ ID NO: 55]

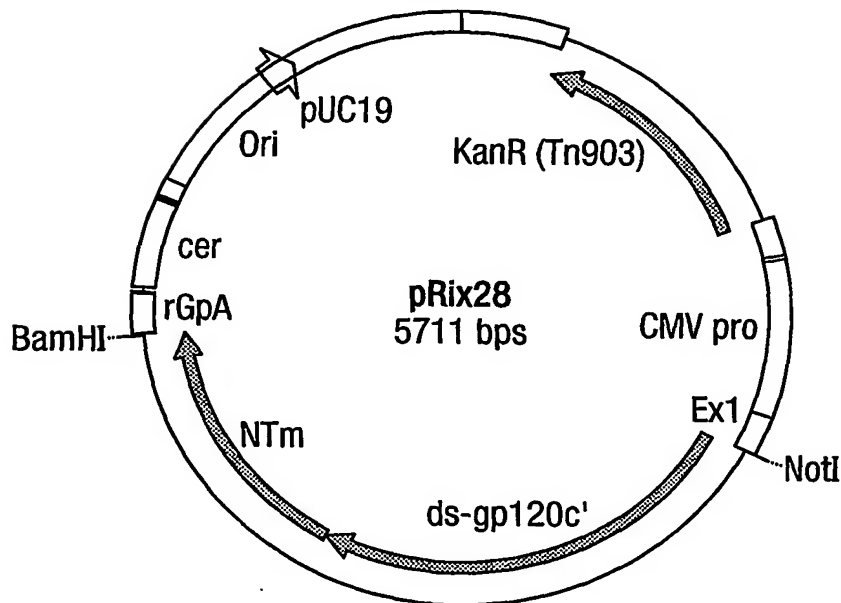
Amino acid sequence of antigen:

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 VDQMHEDIISLWDQSLKPCVKLTPLCVTLDCDDVNTTNTSTTTTNSNGWTGEIRKGEIKNCSEFNITTSIRDKV
 QKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNNT
 FDGKGLCTNVSTVQCTHGIRPVVSTQLLNGSLAEDEVIRSDNFMDNTKTIIVQLNESVAINCTRPNNNT
 RKGIIHIGPGRFYAARKIIGDIRQAHCNLSRAQWNNLTKQIVIKLREHFGNKTIFNQSSGGDPEIVRHSF
 NCGGEFFYCDTTQLFNSTWNGTEGNNTEGNTITLPCRIKQIINMWQEVGKAMYAPPIGGQIRCSSNITGL
 LLTRDGGTEGNGTENETEIFRPGGDMRDNRSELYKYKVVKVEPLGVAPTRAKRRVVQR [SEQ ID
 NO: 56]

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Fig.7.

Plasmid pRix28:



Sequence of insert:

ATGGCCGAGCAGCTGTGGGTCACCGTCTACTACGGCGTGCTGTGTGGAAGGAGGCCACGACCACCCCTCTT
 CTGCGCGAGCGACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCATGCTTGCGTGCCTA
 CGGACCCCAACCCCCAGGAGGTGGTGTCTGGGAAACGTGACCGAGTACTTCAACATGTGGAAGAATAACATG
 GTGGATCAGATGCACGAGGACATCATCTCTGTGTGGGACCAGTCCCTGAAGCCCTGCGTGAAGCTGACGCC
 TCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACCAGCAACGGCTGGA
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 CAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATGCCACCACCAAGAA
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 CCTTCGAACCAATCCCGATCCATTACTGTGCCCCCTGCCGGATTGCGGATCCTCAAGTGTAACAACAAGACC
 TTCGACGGGAAGGGCCTGTGCACCAACGTGACGACGGTGCAGTGCACCCATGGCATCCGCCCCGTCTGTGAG
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 ACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAACTGTACCCGGCCCTAACACAACACC
 CGTAAGGGCATCCACATCGGGCCTGGACGGGCTTCTATGCCGCCCCGCAAGATCATCGGGGACATCCGGCA
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 AACTGCGGGGGCGAGTTCTTCTACTGCGATACGACAGCTCTTCAACTCCACCTGGAACGGCACCAGGGG
 CAACAACACAGAGGGGAACTCCACTATCACCTCCCTTGCCGCATCAAGCAGATCATCAACATGTGGCAGG
 AGGTGGGAAAGGCCATGTATGCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAACATCACCGGCTGT
 CTGCTCACGAGAGACGGGGGCACCGAGGGCAACGGCAGCGAGAACGAGACGGAGATCTTCAGGCCCGGGCG
 CGGCGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTGGAGCCGCTCGGGC
 TGGCCCCCACC CGGGCCAAGCGCCGCTGCTGCAGAGAATGGGTGGCAAGTGGTCAAAAAGTAGTGTGGTT
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 AAGCACAAGAGGAGGAGGAGGTGGGTTTTCCAGTCAACCTCAGGTACCTTTAAGACCAATGACTTACAAG
 GCAGCTGTAGATCTTAGCCACTTTTTTAAAGAAAAGGGGGGACTGGAAGGGCTAATCACTCCCAACGAAG
 ACAAGATATCCTTGATCTGTGGATCTACCACACACAAGGCTACTTCCCTGATTGGCAGAATAACACCAG
 GGCCAGGGGTCAGATATCACTGACCTTTGGATGGTGCTACAAGCTAGTACCAGTTGAGCCAGATAAGGTA
 GAAGAGGGCAATAAAGGAGAGAACACCAGCTTGTACACCCTGTGAGCCTGCATGGAATGGATGACCCTGA
 GAGAGAAGTGTAGAGTGGAGGTTTGACAGCCGCCCTAGCATTTTCATCACGTGGCCCCGAGAGCTGCATCCGG
 AGTACTTCAAGAAGTGCAGTAGTGAGCCAGTAGATCCTAGACTAGAGCCCTGGAAGCATCCAGGAAGTCAG

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Fig.7 (Cont).

CCTAAAACTGCTTGTACCAATTGCTATTGTAAAAAGTGTTGCTTTTCATTGCCAAGTTTGTTCATAACAGC
TGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGGAGACAGCGACGAAGACCTCCTCAAGGCAGTCAGACTC
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[SEQ ID NO: 57]

Amino acid sequence of antigen:

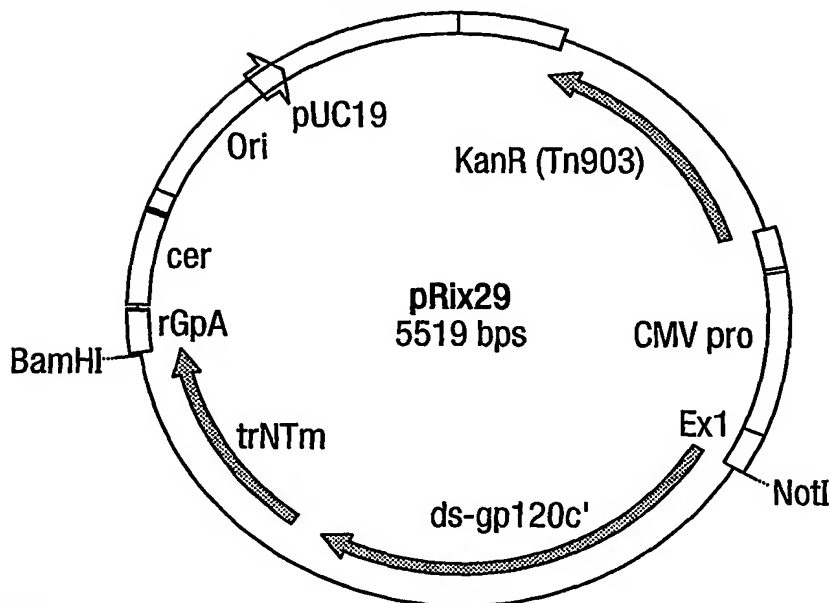
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VDQMHEDIISLWDQSLKPCVKLTPLCVTLDCDDVNTTNSTTTTSNGWTGEIRKGEIKNCSEFNITTSIRDKV
QKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNNKT
FDGKGLCTNVSTVQCTHGIRPVVSTQLLLNGSLAESEVIRSDNFMDNTKTIIVQLNESVAINCTRPNNNT
RKGIIHGPGRAFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVIKLREHFGNKTIKFNQSSGGDPEIVRHSF
NCGGEFFYCDTTQLFNSTWNGTEGNNTTEGNSTITLPCRIKQIINMWQEVGKAMYAPPIGGQIRCSSNITGL
LLTRDGGTEGNGTENETEIFRPGGGDMRDNRSELYKYKVVKVEPLGVAPTRAKRRVVQRMGGKWSKSSVV
GWPTVRERMRAEPAADGVGAASRDLEKHGAITSSNTAATNAACAWLEAQEEEEVGFPVTPQVPLRPMTYK
AAVDLSHFLKEKGGLEGLIHSQRRQDILDWIYHTQGYFPDWQNYTPGPGVRYPLTFGWICYKLVPEPDKV
EEANKGENTSLHPVSLHGMDPEREVLEWRFD SRLAFHHVARELHPEYFKNCTSEPVDPRLPEPWKHPGSQ
PKTACTNCYCKKCCFHCQVCFITAAALGISYGRKKRRQRRRPPQGSQTHQVSLSKQPTSQSKGEPTGPKE

[SEQ ID NO: 58]

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Fig.8.

Plasmid pRix29:



Sequence of insert:

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 CGGACCCCAACCCCAAGGAGGTGGTGTCTGGGAAACGTGACCGAGTACTTCAACATGTGGAAGAATAACATG
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 CACCCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGATCCGGTCGGACAACCTCATGGACA
 ACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAACTGTACCCGGCCCTAACACAACACC
 CGTAAGGGCATCCACATCGGGCCTGGACGGGCCCTTCTATGCCGCCCGCAAGATCATCGGCGACATCCGGCA
 GGCCCATTTGCAACCTCTCCCGCGCCAGTGAATAACACCCTGAAGCAGATCGTGATCAAGCTGAGAGAGC
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 CAACAACACAGAGGGAACTCCACTATCACCCCTCCCTTGCCCGCATCAAGCAGATCATCAACATGTGGCAGG
 AGGTGGGAAAGGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAACATCACCGGCCTG
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 GCTAATTCACTCCCAACGAAGACAAGATATCCTTGATCTGTGGATCTACCACACACAAGGCTACTTCCCTG
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 CCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGTTACACCTGTGAGCCT
 GCATGGAATGGATGACCCTGAGAGAGAAGTGTAGAGTGGAGGTTTGACAGCCGCTAGCATTTCATCAGG
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 CCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGGAGACAGCGACGAAGAC
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Fig.8 (Cont).

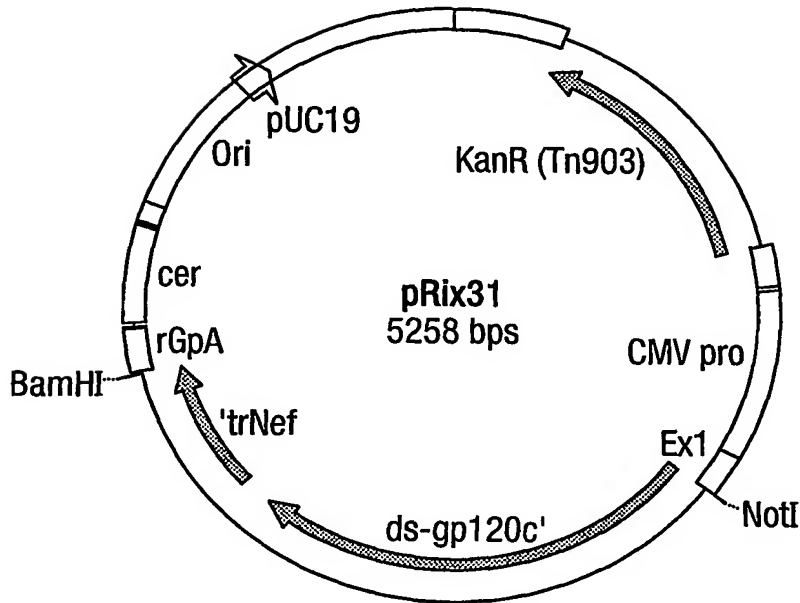
Amino acid sequence of antigen:

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FDGKGLCTNVSTVQCTHGIRPVVSTQLLNGLSLAEDEVIRSDNFMNTKTIIIVQLNESVAINCTRPNNNT
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NCGGEFFYCDTTQLFNSTWNGTEGNNTEGNSTITLPCRIKQIINMWQEVGKAMYAPPIGGQIRCSSNITGL
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LRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWYHTQGYFPDWQNYTPGPGVRYPLTFGWCYKLV
PVEPDKVEEANKGENTSLLHPVSLHGMDDPEREVLEWRFD SRLAFHHVARELHPEYFKNCTSEPVDPRLEP
WKHPGSQPKTACTNCYCKKCCFHCQVCFITAALGISYGRKKRRQRRRPPQGSQTHQVSLSKQPTSQSKGEP
TGPKE [SEQ ID NO: 60]

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Fig.9.

Plasmid pRix31:



Sequence of insert:

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 CGTAAGGGCATCCACATCGGGCCTGGACGGGCCTTCTATGCCGCCCGCAAGATCATCGGCGACATCCGGCA
 GGCCCATTCGAACCTCTCCCGCGCCAGTGAATAACACCCTGAAGCAGATCGTGATCAAGCTGAGAGAGC
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Amino acid sequence of antigen:

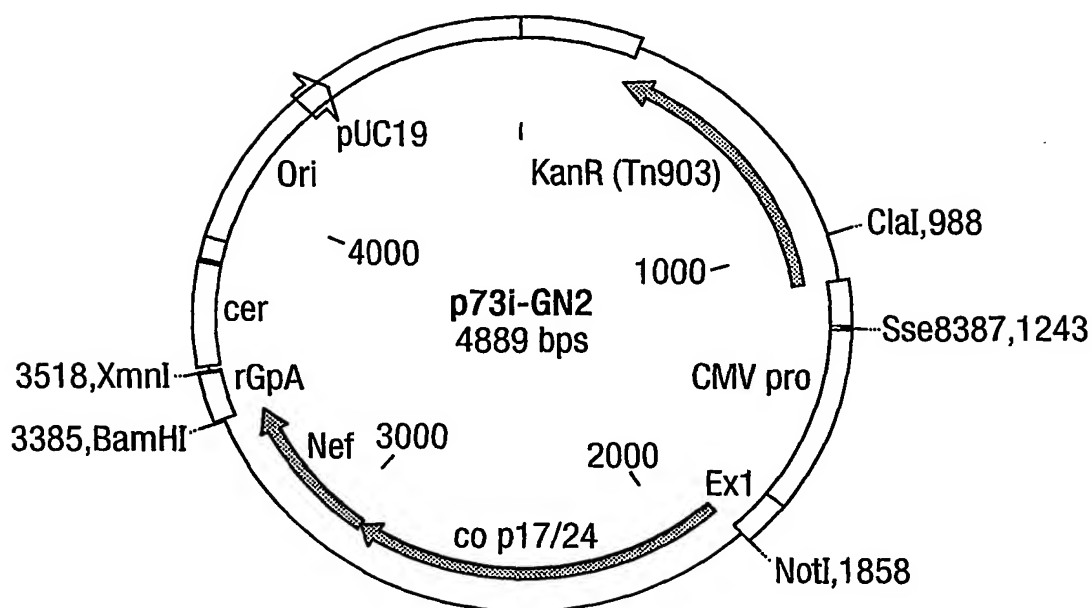
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Fig.9 (Cont).

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[SEQ ID NO: 62]

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Fig.10.



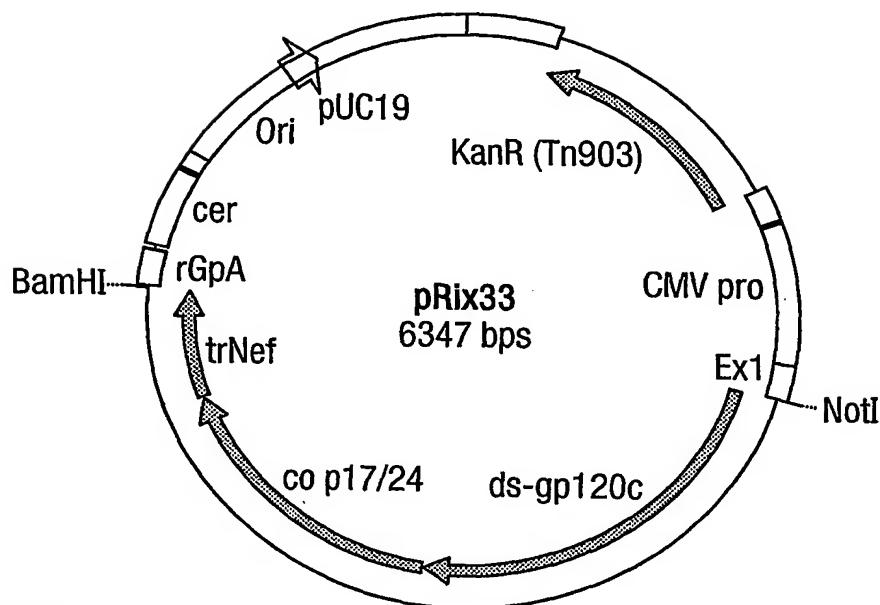
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 ACACCAGGGCCAGGGGTCAGATATCCACTGACCTTTGGATGGTGCTACAAGCTAGTACCAGTTGAGCCAGA
 TAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGTTACACCCTGTGAGCCTGCATGGGATGGATG
 ACCCGGAGAGAGAAGTGTTAGAGTGAGGTTTGACAGCCGCCTAGCATTTTCATCACGTGGCCCGAGAGCTG
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Fig.11.

Plasmid pRix33:



Sequence of insert:

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Fig.11 (Cont).

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[SEQ ID NO: 64]

Amino acid sequence of antigen:

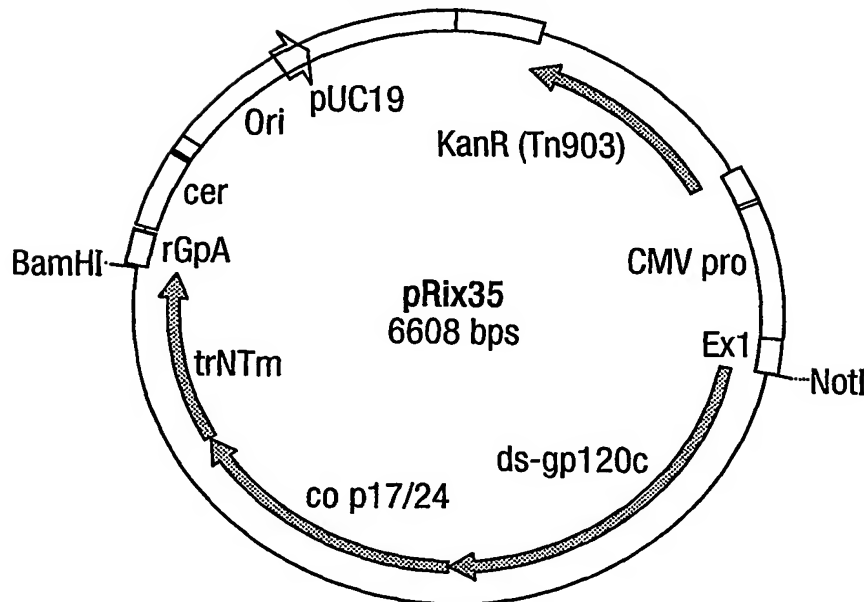
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[SEQ ID NO: 65]

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Fig.12.

Plasmid pRix35:



Sequence of insert

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Fig.12 (Cont).

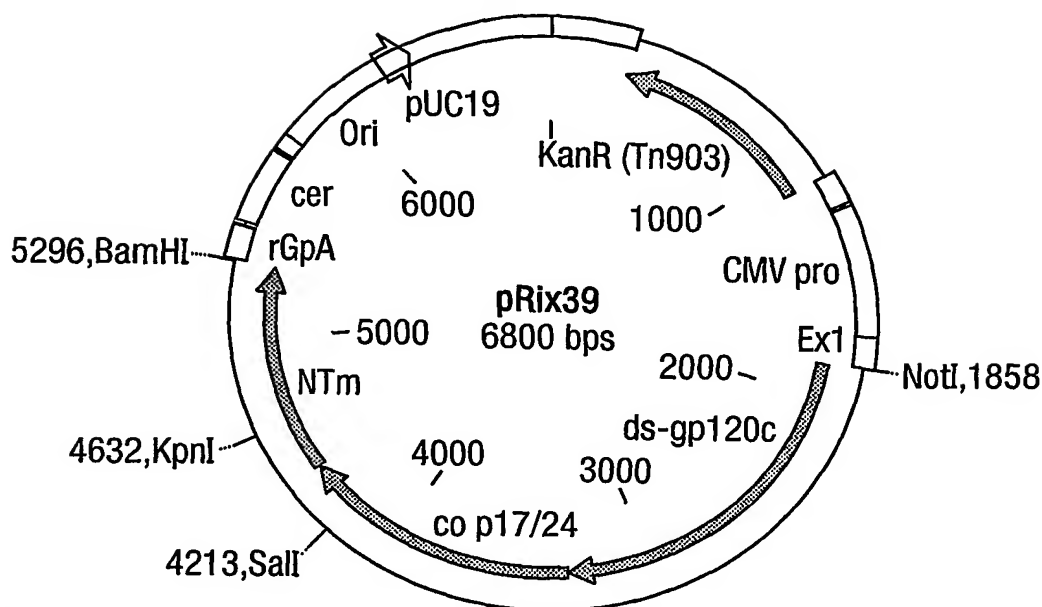
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Amino acid sequence of antigen:

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Fig.13.



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Fig.13 (Cont).

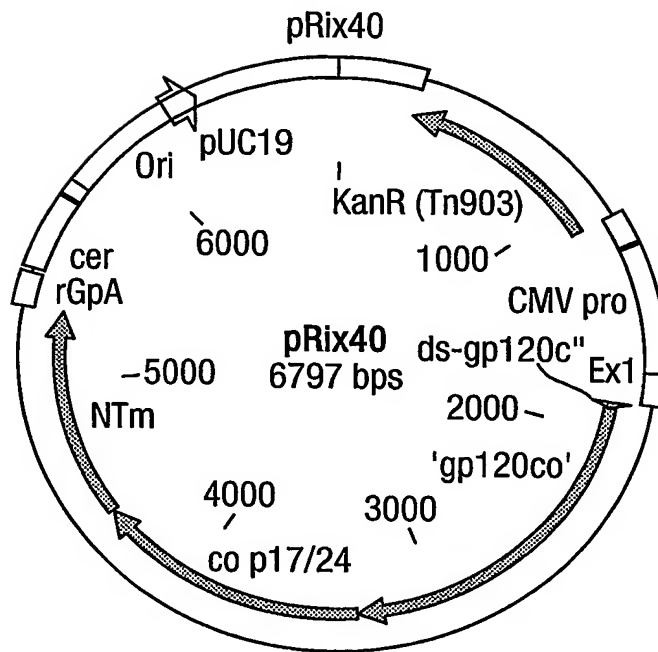
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ATLYCVHQRIEIKDTKEALDKIEEEQNKSKKKAQQAADTGHSNOVSQNYPIVQNIQGMVHQAI SPRTL N
AWVKVVEEKAFSPEVIPMFSALSEGATPQDLNMTLNTVGGHQAMQMLKETINEEAAEWDRVHPVHAGPIA
PGQMRPRGSDIAGTTSTLQEQIGWMTNPNPIPVGEIYKRWIILGLNKIVRMYSPITSILDIRQGPKEPFRD
YVDRFYKTLRAEQASQEVKNWMTETLLVQANPDCKTILKALGPAATLEEMMTACQGVGGPGHKARVLMGG
KWSKSSVVGWPTVRERMRRRAEPAADGVGAASRDLEKHGAITSSNTAATNAACAWLEAQEEEEVGFPVTPQV
PLRPMTYKAAVDLSHFLKEKGLLEGLIHSQRRQDILDWIYHTQGYFPDWQNYTPGPGVRYPLTFGWCYKL
VPVEPDKVEEANKGENTSLLHPVSLHGMDDPEREVLEWRFD SRLAFHHVARELHPEYFKNCTSEPVDPRL E
PWKHPGSQPKTACTNCYCKKCCFHCQVCFITAALGISYGRKKRRQRRRPPQGSQTHQVSLSKQPTSQSKGE
PTGPKE [SEQ ID NO: 69]

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Fig.14.



DNA sequence of insert

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 CGGACCCCAACCCCCAGGAGGTGGTGCTGGGAAACGTGACCGAGTACTTCAACATGTGGAAGAATAACATG
 GTGGATCAGATGCACGAGGACATCATCTCTCTGTGGGACCAGTCCCTGAAGCCCTGCGTGAAGCTGACGCC
 TCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACCAGCAACGGCTGGA
 CCGGAGAGATTTCGGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCACGACCTCGATCAGAGACAAGGTG
 CAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATGCCACCACCAAGAA
 CAAGACGACGCGTAATTTTCACTCATTCACTGCAACAGCAGCGTCATGACGCGAGGCCTGCCCCAAGGTGT
 CCTTCGAACCAATCCCGATCCATTACTGTGCCCCTGCCGGATTCGCGATCCTCAAGTGTAAACAACAAGACC
 TTCGACGGGAAGGGCCTGTGCACCAACGTGACGACGGTGCAGTGCACCCATGGCATCCGCCCCGTCGTGAG
 CACCCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGGTGGTGTATCCGGTCCGACAACCTCATGGACA
 ACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAACTGTACCCGGCCTAACAACAACACC
 CGTAAGGGCATCCACATCGGGCCTGGACGGGCTTCTATGCCGCCGCAAGATCATCGGCGACATCCGGCA
 GGCCCATTTGCAACCTCTCCCGCGCCAGTGGAATAACACCCTGAAGCAGATCGTGATCAAGCTGAGAGAGC
 ACTTTGGAAACAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCCGAGATCGTGCGGCACCTCCTTC
 AACTGCGGGGGCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGAACGGCACCCGAGGG
 CAACAACACAGAGGGGAACTCCACTATCACCTCCCTTGCCGCATCAAGCAGATCATCAACATGTGGCAGG
 AGGTGGGAAAGGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAACATCACCGGCCTG
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 CGGCGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTGGAGCCGCTCGGCG
 TGGCCCCCACC CGGGCAAGCGCCGCTCGTGCAGAGAATGGGTGCCCGAGCTTCGGTACTGTCTGGTGGGA
 GAGCTGGACAGATGGGAGAAAATTAGGCTGCGCCCGGGAGGCCAAAAGAAATACAAGCTCAAGCATATCGT
 GTGGGCCTCGAGGGAGCTTGAACGGTTTGCCGTGAACCCAGGCCTGCTGGAAACATCTGAGGGATGTGCC
 AGATCCTGGGGCAATTGCAGCCATCCCTCCAGACCGGGAGTGAAGAGCTGAGGTCTTGTATAACACAGTG
 GCTACCTCTACTGCGTACACCAGAGGATCGAGATTAAGGATACCAAGGAGGCCCTGGACAAAATTGAGGA
 GGAGCAAAACAAGAGCAAGAAGAAGGCCAGCAGGCAGCTGCTGACACTGGGCATAGCAACCAGGTATCAC
 AGAACTATCCTATTGTCCAAAACATTCAGGGCCAGATGGTTTCATCAGGCCATCAGCCCCCGGACGCTCAAT
 GCCTGGGTGAAGGTTGTGCAAGAGAAGGCCTTTTCTCCTGAGGTTATCCCCATGTTCTCCGCTTTGAGTGA
 GGGGGCCACTCCTCAGGACCTCAATACAATGCTTAATACCGTGGGCGGCCATCAGGCCGCCATGCAAATGT
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Fig.14 (Cont).

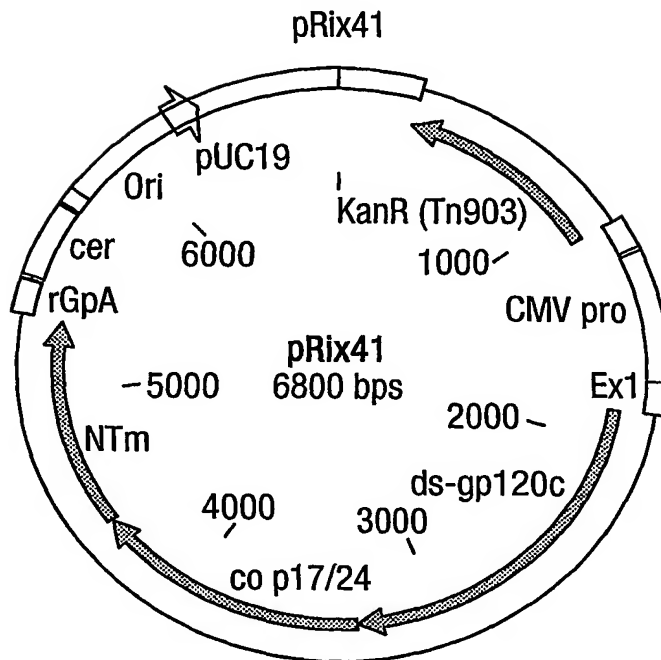
CCCGGACAGATGCGGGAGCCTCGCGGCTCTGACATTGCCGGCACCACCTCTACACTGCAAGAGCAAATCGG
 ATGGATGACCAACAATCCTCCCATCCCAGTTGGAGAAATCTATAAACGGTGGATCATTCTCGGTCTCAATA
 AAATTGTTAGAATGTACTCTCCGACATCCATCCTTGACATTAGACAGGGACCCAAAGAGCCTTTTAGGGAT
 TACGTCGACCGGTTTTATAAGACCCTGCGAGCAGAGCAGGCCTCTCAGGAGGTCAAAAACCTGGATGACGGA
 GACACTCCTGGTACAGAACGCTAACCCCGACTGCAAAACAATCTTGAAGGCACTAGGCCCGGCTGCCACCC
 TGGAAGAGATGATGACCGCCTGTCAGGGAGTAGGCGGACCCGGACACAAAGCCAGAGTGTTGATGGGCAAG
 TGGTCAAAAAGTAGTGTGGTTGGATGGCCTACTGTAAGGGAAGAATGAGACGAGCTGAGCCAGCAGCAGA
 TGGGGTGGGAGCAGCATCTCGAGACCTGGA AAAACATGGAGCAATCACAAGTAGCAATACAGCAGCTACCA
 ATGCTGCTTGTGCTGGCTAGAAGCACAAGAGGAGGAGGAGGTGGGTTTTCCAGTCACACCTCAGGTACCT
 TTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTTAAAGAAAAGGGGGGACTGGAAGG
 GCTAATTCCTCCCAACGAAGACAAGATATCCTTGATCTGTGGATCTACCACACACAAGGCTACTTCCCTG
 ATTGGCAGAACTACACACCAGGGCCAGGGGTGAGATATCCACTGACCTTTGGATGGTGCTACAAGCTAGTA
 CCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGTTACACCCTGTGAGCCT
 GCATGGAATGGATGACCCTGAGAGAGAAGTGTTAGAGTGGAGGTTTGACAGCCGCCTAGCATTTCATCAGG
 TGGCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGCACTAGTGAGCCAGTAGATCCTAGACTAGAGCCC
 TGGAAGCATCCAGGAAGTCAGCCTAAAACCTGCTTGTACCAATTGCTATTGTAAAAAGTGTTGCTTTCATTG
 CCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGGAGACAGCGACGAAGAC
 CTCCTCAAGGCAGTCAGACTCATCAAGTTTCTCTATCAAGCAACCCACCTCCCAATCCAAAGGGGAGCCG
 ACAGGCCCGAAGGAATAA [SEQ ID NO: 70]

Aminoacid sequence of insert

MAEQLWVTVYYGVPVWKEATTTLFCASDAKAYDTEVHNWATHACVPTDPNPQEVVLGNVTEYFNMWKNM
 VDQMHEDIISLWDQSLKPCVKLTPLCVTLDCDDVNTTNSTTTTNSGWTGEIRKGEIKNCSFNITTSIRDKV
 QKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNNKT
 FDGKGLCTNVSTVQCTHGIRPVVSTQLLLNGSLAEDEVVIRSDNFMNTKTIIVQLNESVAINCTRPNNT
 RKGIIHGPGRAFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVIKLREHFGNKTIFNQSSGGDPEIVRHSF
 NCGGEFFYCDTTQLFNSTWNGTEGNTEGNSTITLPCRIKQIINMWQEVGKAMYAPPIGGQIRCSSNITGL
 LLTRDGGTEGNTEGNETEIFRPGGGDMRDNRSELYKYKVVKEPLGVAPTRAKRRVVQRMGARASVLSGG
 ELDRWEKIRLRPGGKKKYKLKHIVWASRELERFAVNPGLLETSEGCRQILGQLQPSLQTGSEELRSLYNTV
 ATLYCVHQRIEIKDTKEALDKIEEQNKSKKKAQQAADTGHSNQVSQNYPIVQNIQGMVHQAI SPRTLN
 AWVKVVEEKAFSPVPIPMFSALSEGATPQDLNMTLNTVGGHQAMQMLKETINEEAAEWDRVHPVHAGPIA
 PGQMREPRGSDIAGTTSTLQEQIGWMTNPNPIVGEIYKRWIILGLNKIVRMYSPITSILDIRQGPKEPFRD
 YVDRFYKTLRAEQASQEVKNWMTETLLVQANPDCKTILKALGPAATLEEMMTACQGVGGPGHKARVLMGK
 WSKSSVVGWPTVRERMRAEPAADGVGAASRDLEKHGAITSSNTAATNAACAWLEAQEEEEVGFPVTPQVP
 LRPMTYKAAVDLSHFLKEKGGLGLELIHSQRRQDILDWYHTQGYFPDWQNYTPGPGVRYPLTFGWCKLV
 PVEPDKVEEANKGENTSLHPVSLHGMDDPEREVLEWRFDRLAFHHVARELHPEYFKNCTSEPVDPRLEP
 WKHPGSQPKTACTNCYCKKCCFHCQVCFITAAALGISYGRKKRRQRRRPPQGSQTHQVSLSKQPTSQSKGEP
 TGPKE [SEQ ID NO: 71]

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Fig.15.



DNA sequence of insert

ATGGCCGAGCAGCTGTGGGTCACCGTCTACTACGGCGTGCCTGTGTGGAAGGAGGCCACGACCACCCTCTT
 CTGCGCGAGCGACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCATGCTTGCGTGCCTA
 CGGACCCCAACCCCAAGGAGGTGGTGTCTGGGAAACGTGACCGAGTACTTCAACATGTGGAAGAATAACATG
 GTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCGATCCCTGAAGCCCTGCGTGAAGCTGACGCC
 TCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACCAGCAACGGCTGGA
 CCGGAGAGATTTCGGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCACGACCTCGATCAGAGACAAGGTG
 CAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATGCCACCACCAAGAA
 CAAGACGACGCGTAATTTTCACTGCAACAGCAGCGTCATGACGCAGGCCTGCCCCAAGGTGT
 CCTTCGAACCAATCCCGATCCATTACTGTGCCCCGCGGATTCGCGATCCTCAAGTGTAACAACAAGACC
 TTCGACGGGAAGGGCCTGTGCACCAACGTGACGACGGTGCAGTGCACCCATGGCATCCGCCCGTCTGAG
 CACCCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGTATCCGGTCGGACAACCTTCATGGACA
 ACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAACTGTACCCGGCCTAACAACAACACC
 CGTAAGGGCATCCACATCGGGCCTGGACGGGCTTCTATGCCGCCCGCAAGATCATCGGCGACATCCGGCA
 GGCCCATTGCAACCTCTCCCGCGCCAGTGAATAACACCCTGAAGCAGATCGTGATCAAGCTGAGAGAGC
 ACTTTGGAACAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCGAGATCGTGCGGCACTCCTTC
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 GCTACCCTCTACTGCGTACACCAGAGGATCGAGATTAAGGATACCAAGGAGGCCTTGAGCAAAAATTGAGGA
 GGAGCAAAACAAGAGCAAGAAGAAGGCCAGCAGGCAGCTGCTGACACTGGGCATAGCAACCAGGTATCAC
 AGAATATCCTATTGTCCAAAACATTCAGGGCCAGATGGTTTCATCAGGCCATCAGCCCCGGACGCTCAAT
 GCCTGGGTGAAGGTTGTGCAAGAGAAGGCCTTTTCTCCTGAGGTTATCCCCATGTTCTCCGCTTTGAGTGA
 GGGGGCCACTCCTCAGGACCTCAATACAATGCTTAATACCGTGGGCGGCCATCAGGCCGCCATGCAAATGT

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Fig.15 (Cont).

TGAAGGAGACTATCAACGAGGAGGCAGCCGAGTGGGACAGAGTGCATCCCGTCCACGCTGGCCCAATCGCG
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 ATGGATGACCAACAATCCTCCCATCCCAGTTGGAGAAATCTATAAACGGTGGATCATTCTCGGTCTCAATA
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 CTGATTGGCAGAACTACACACCAGGGCCAGGGGTCAGATATCCACTGACCTTTGGATGGTGTACAAGCTA
 GTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCGCCTTACACCCTGTGAG
 CCTGCATGGAAATGGATGACCCCTGAGAGAGAAGTGTAGAGTGGAGGTTTGACAGCCGCCTAGCATTTCATC
 ACGTGGCCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGCACCTAGTGAGCCAGTAGATCCTAGACTAGAG
 CCCTGGAAGCATCCAGGAAGTCAGCCTAAAAGTGTGTTGACCAATTGCTATTGTAAAAGTGTGCTTTCA
 TTGCCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGGAGACAGCGAAGAA
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 CCGACAGGCCCGAAGGAATAA [SEQ ID NO: 72]

Aminoacid sequence of insert

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 QKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNNKT
 FDGKGLCTNVSTVQCTHGIRPVVSTQLLNGSLAEEEVVIRSDNFMNKTIIIVQLNESVAINCTRPNNT
 RKGIIHIGPGRFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVIKLREHFGNKTIFKNQSSGGDPEIVRHSF
 NCGGEFFYCDTTQLFNSTWNGTEGNNTTEGNSTITLPCRQIINMWQEVGKAMYAPPIGGQIRCSSNITGL
 LLTRDGGTEGNNGTENETEIFRPGGDMRDNRSELYKYKVVKVEPLGVAPTRAKRRVVQRMGARASVLSGG
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 ATLYCVHQRIEIKDTKEALDKIEEQNKSKKKAQQAADTGHSNQVSQNYPIVQNIQGQMVHQAISPRTLN
 AWVKVVEEKAFSPFVIMFSALEGATPQDLNMTLNTVGGHQAMQMLKETINEEAAEWDRVHPVHAGPIA
 PGQMRPRGSDIAGTTSTLQEQIGWMTNNPPIPVGEIYKRWIIILGLNKIVRMYSPTSILDIRQGPKEPRD
 YVDRFYKTLRAEQASQEVKNWMTETLLVQANANPDCKTILKALGPAATLEEMMTACQGVGGPGHKARVLMGG
 KWSKSSVVGWPTVRERMRRAEPAADGVGAASRDLEKHGAITSSNTAATNAACAWLEAQEEEEVGFPVTPQV
 PLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWIYHTQGYFPDWQNYTPGPGVRYPLTFGWCYKL
 VPVEPDKVEEANKGENTSALHPVSLHGMDDPEREVLEWRFDLSRLAFHHVARELHPEYFKNCTSEPVDPRLE
 PWKHPGSQPKTACTNCYCKKCCFHCQVCFITAALGISYGRKKRRQRRRPPQGSQTHQVSLSKQPTSQSKGE
 PTGPKE [SEQ ID NO: 73]

Fig.16.



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TCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCAGTACCACCACCAGCAACGGCTGGG
CCGGAGAGATTTCGGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCACGACCTCGATCAGAGACAAGGTG
CAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATGCCACCACCAAGAA
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Fig.16 (Cont).

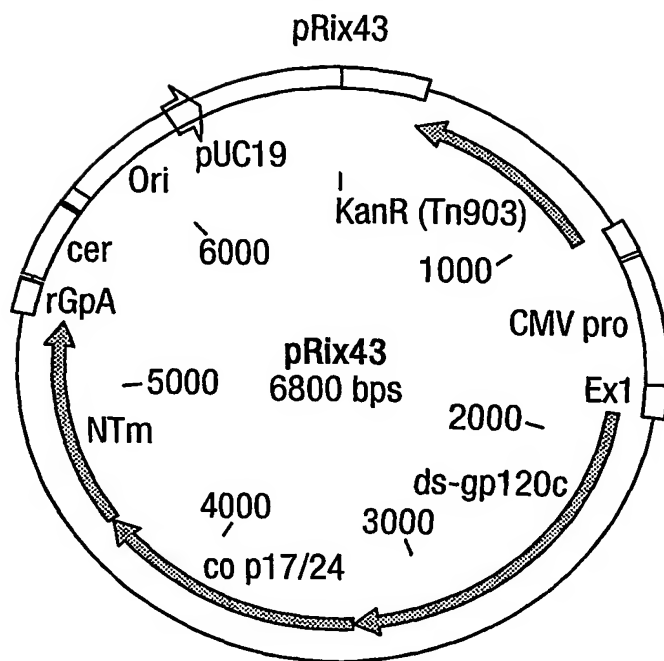
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TGGAAGAGATGATGACCGCCTGTCAGGGAGTAGGCGGACCCGGACACAAAGCCAGAGTGTTGATGGGTGGC
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CCAATGCTGCTTGTGCCTGGCTAGAAGCACAAGAGGAGGAGGAGGTGGGTTTTCCAGTCACACCTCAGGTA
CCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTTAAAGAAAAGGGGGGACTGGA
AGGGCTAATTCACCTCCCAACGAAGACAAGATATCCTTGATCTGTGGATCTACCACACACAAGGCTACTTCC
CTGATTGGCAGAACTACACACCAGGGCCAGGGGTCAGATATCCACTGACCTTTGGATGGTGCTACAAGCTA
GTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGGCACACCCTGTGAG
CCTGCATGGAATGGATGACCCTGAGAGAGAAGTGTTAGAGTGGAGGTTTGACAGCCGCCTAGCATTTTCATC
ACGTGGCCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGCACTAGTGAGCCAGTAGATCCTAGACTAGAG
CCCTGGAAGCATCCAGGAAGTCAGCCTAAACTGCTTGTACCAATTGCTATTGTAAAAAGTGTGCTTTCA
TTGCCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGGAGACAGCGACGAA
GACCTCCTCAAGGCAGTCAGACTCATCAAGTTTCTCTATCAAAGCAACCCACCTCCCAATCCAAAGGGGAG
CCGACAGGCCCCGAAGGAATAA [SEQ ID NO: 74]

Aminoacid sequence of insert

MAEQLWVTVYYGVVPVWKEATTTLCASDAKAYDTEVHNWVATHACVPTDPNPQEVVLGNVTEYFNMWKNNM
VDQMHEDIISLWDQSLKPCVKLTPLCVTLDCDDVNTTNSTTTTSSNGWTGEIRKGEIKNCSFNITTSIRDKV
QKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNKNT
FDGKGLCTNVSTVQCTHGIRPVVSTQLLNGSLAEEVVIRSDNFMNTKTIIVQLNESVAINCTRPNNNT
RKGIIHGPGRAFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVIKLREHFGNKTIFNQSSGGDPEIVRHSF
NCGGEFFYCDTTQLFNSTWNGTEGNNTEGNSTITLPCRKQIINMWQEVGKAMYAPPIGGQIRCSSNITGL
LLTRDGGTEGNGTENETEIFRPGGDMRDNRSELYKYKVVKVEPLGVAPTRAKRRVVQRMGARASVLSGG
ELDRWEKIRLRPGGKKKYKLKHIVWASRELERFAVNPGLLETSEGCRLGQLQPSLQTGSEELRSLYNTV
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AWVKVVEEKAFSPFVPMFSALSEGATPQDLNLTMLNTVGGHQAAMQMLKETINEEAAEWDRVHPVHAGPIA
PGQMREPRGSDIAGTTSTLQEQIGWMTNNPPIPVGEIYKRWII LGLNKIVRMYSPTSILDIRQGPKEPFRD
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KWSKSSVVGWPTVVRERMRAEPAADGVGAASRDLEKHGAITSSNTAATNAACAWLEAQEEEEVGFPVTPQV
PLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWIYHTQGYFPDWQNYTPGPGVRYPLTFGWCYKL
VPVEPDKVEEANKGENTSLAHPVSLHGMDPEREVLEWRFD SRLAFHHVARELHPEYFKNCTSEPVDPRLE
PWKHPGSQPKTACTNCYCKKCFHCQVCFITAALGISYGRKKRRQRRRPPQGSQTHQVSLSKQPTSQSKGE
PTGPKE [SEQ ID NO: 75]

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Fig.17.



DNA sequence of insert

ATGGCCGAGCAGCTGTGGGTCACCGTCTACTACGGCGTGCCTGTGTGGAAGGAGGCCACGACCACCCTCTT
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 CGGACCCCAACCCCAAGGAGGTGGTGTCTGGGAAACGTGACCGAGTACTTCAACATGTGGAAGAATAACATG
 GTGGATCAGATGCACGAGGACATCATCTCTGTGTGGGACCAGTCCCTGAAGCCCTGCGTGAAGCTGACGCC
 TCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACCAGCAACGGCTGGA
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 TTCGACGGGAAGGGCCTGTGCACCAACGTGACGACGGTGCAGTGCACCCATGGCATCCGCCCCGTCTGTGAG
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Fig.17 (Cont).

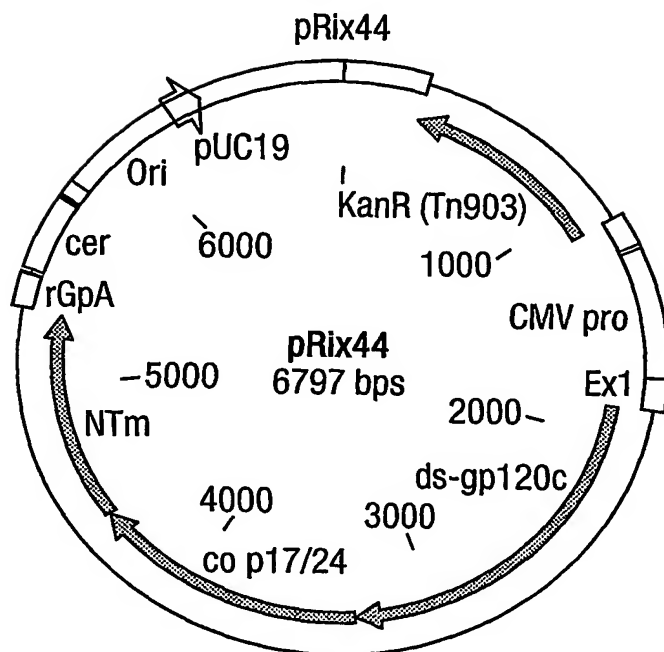
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 CCGACAGGCCCGAAGGAATAA [SEQ ID NO: 76]

Aminoacid sequence of insert

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 QKEYALFYNLDVPIDDDNATTKNKTTRNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNNKT
 FDGKGLCTNVSTVQCTHGIRPVVSTQLLLNGSLAEEEVVIRSDNFMNDNTKTIIVQLNESVAINCTRPNNT
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 PLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWIYHTQGYFPDWQNYTPGPGVRYPLTFGWCYKL
 VPVEPDKVEEANKGENTSAAHPVSLHGMDPEREVLEWRFDLSRLAFHHVARELHPEYFKNCTSEVPDRLE
 PWKHPSQPKTACTNICYCKKCCFHCQVCFITAALGISYGRKKRRQRRRPPQGSQTHQVSLSKQPTSQSKGE
 PTGPKE [SEQ ID NO: 77]

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Fig.18.



DNA sequence of insert

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 TCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACCAGCAACGGCTGGA
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Fig.18 (Cont).

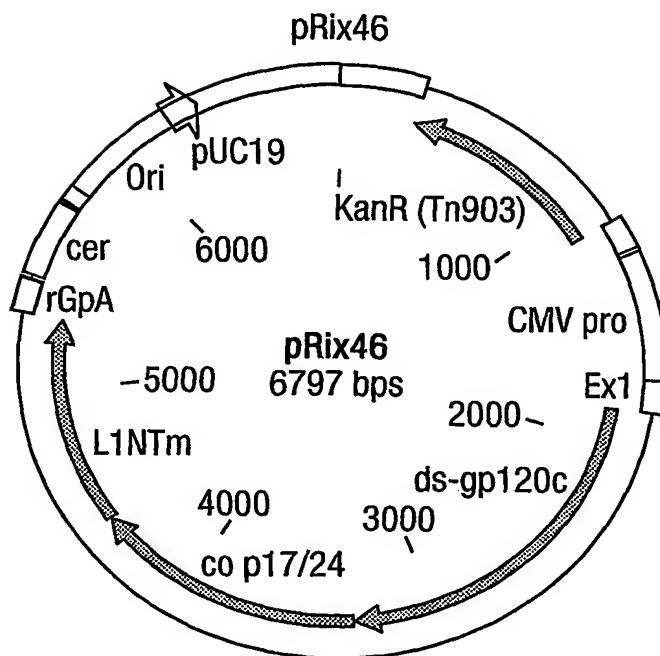
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Aminoacid sequence of insert

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TGPKE [SEQ ID NO: 79]

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Fig.19.



DNA sequence of insert

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 TCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACCAGCAACGGCTGGA
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Fig.19 (Cont).

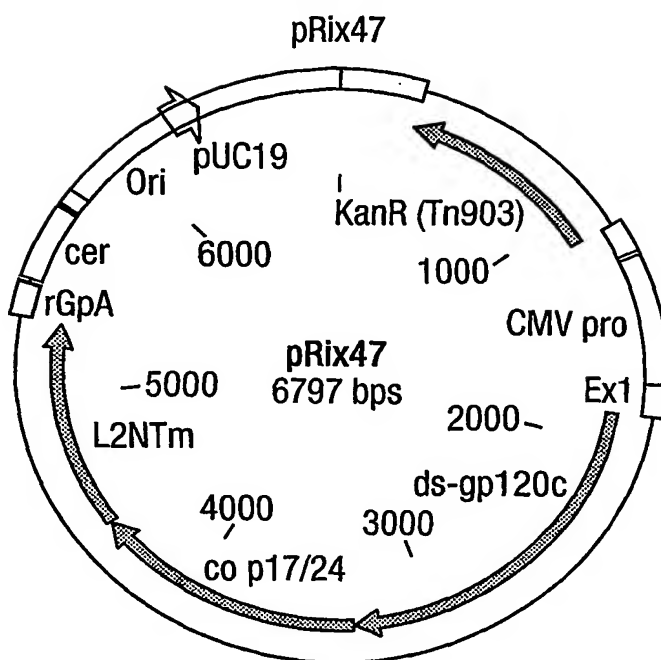
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Aminoacid sequence of insert

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 QKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQACPVSFEPIPIHYCAPAGFAILKCNKNT
 FDGKGLCTNVSTVQCTHGIRPVVSTQLLLNGSLAEEEVVIRSDNFMDNTKTIIIVQLNESVAINCTRPNNT
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 PVEPKVEEANKGENTSALHPVSLHGMDDPEREVLEWRFD SRLAFHHVARELHPEYFKNCTSEPVDPRLP
 WKHPGSQPKTACTNCYCKKCCFHCQVCFITAALGISYGRKRRRQRRRPPQGSQTHQVSLSKQPTSQSKGEP
 TGPKE [SEQ ID NO: 81]

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Fig.20.



DNA sequence of insert

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Fig.20 (Cont).

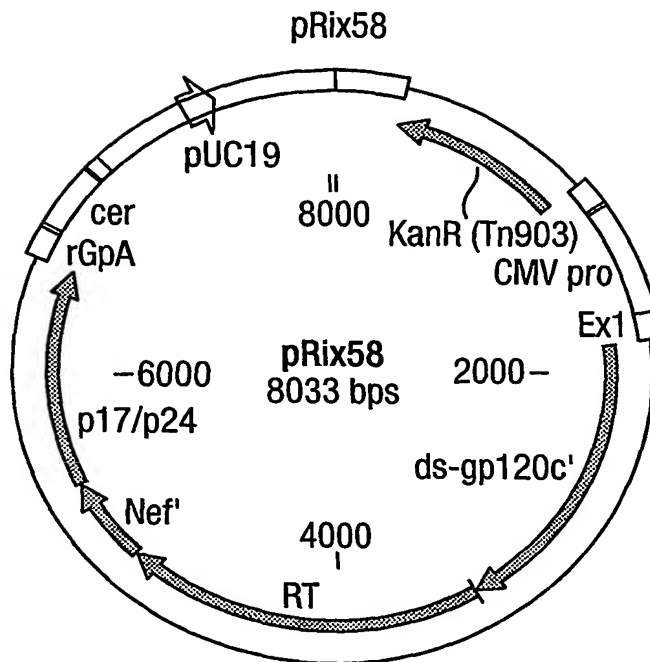
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CCCGGACAGATGCGGGAGCCTCGCGGCTCTGACATTGCCGGCACCACCTCTACACTGCAAGAGCAAATCGG
ATGGATGACCAACAATCCTCCCATCCCAGTTGGAGAAATCTATAAACGGTGGATCATTCTCGGTCTCAATA
AAATTGTTAGAATGTACTCTCCGACATCCATCCTTGACATTAGACAGGGACCCAAAGAGCCTTTTAGGGAT
TACGTCGACCGGTTTTATAAGACCCTGCGAGCAGAGCAGGCCTCTCAGGAGGTCAAAAACCTGGATGACGGA
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TGGAAGAGATGATGACCGCTGTGAGGGAGTAGGCGGACCCGGACACAAAGCCAGAGTGTTGATGGGCAAG
TGGTCAAAAAGTAGTGTGGTTGGATGGCTACTGTAAGGGAAAGAATGAGACGAGCTGAGCCAGCAGCAGA
TGGGGTGGGAGCAGCATCTCGAGACCTGGAAAAACATGGAGCAATCACAAAGTAGCAATACAGCAGCTACCA
ATGCTGCTTGTGCCTGGCTAGAAGCACAAGAGGAGGAGGAGGTGGGTTTTCCAGTCACACCTCAGGTACCT
TTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTTTAAAGAAAAGGGGGGACTGGAAGG
GCTAATTCACCTCCCAACGAAGACAAGATATCCTTGATCTGTGGATCTACCACACACAAGGCTACTTCCCTG
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GCATGGAATGGATGACCCCTGAGAGAGAAGTGTTAGAGTGGAGGTTTGACAGCCGCCTAGCATTTCATCAG
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TGGAAGCATCCAGGAAGTCAGCCTAAAACTGCTTGTACCAATTGCTATTGTAAAAAGTGTTGCTTTCATTG
CCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGGAGACAGCGACGAAGAC
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ACAGGCCCGAAGGAATAA [SEQ ID NO: 82]

Aminoacid sequence of insert

MAEQLWVTVYYGVFVWKEATTTLFCASDAKAYDTEVHNVWATHACVPTDPNPQEVVLGNVTEYFNMWKNNM
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QKEYALFYNLDVVPIDDD NATTKNKTTRNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNNT
FDGKGLCTNVSTVQCTHGIRPVVSTQLLNGSLAEDEVVIRSDFMDNTKTIIVQLNESVAINCTRPNNT
RKGIIHIGPGRAFYAARKIIGDIRQAHCNLSRAQWNNLTKQIVIKLREHFGNKTIFKNQSSGGDPEIVRHSF
NCGGEFFYCDTTQLFNSTWNGTEGNNTTEGNSTITLPCRIOIINMWQEVGKAMYAPPIGGQIRCSSNITGL
LLTRDGGTEGNNGTENETEIFRPGGDMRDNRSELYKYKVVEPLGVAPTRAKRRVVQRMGARASVLSGG
ELDRWEKIRLRPGGKKKYKLKHIVWASRELERFAVNPLLETSEGCRQILGQLQPSLQTGSEELRSLYNTV
ATLYCVHQRIEIKDTKEALDKIEEQNKSKKKAQQAADTGHSNQVSQNYPIVQNIQGQMVHQAISPRTLN
AWVKVVEEKAFSPEVIPMFSALEGATPQDLNMTLNTVGGHQAMQMLKETINEEAAEWDRVHPVHAGPIA
PGQMREPRGSDIAGTTSTLQEQIGWMTNPNPIPVGEIYKRWIILGLNKIVRMYSPTSILDIRQGPKEPFRD
YVDRFYKTLRAEQASQEVKNWMTETLLVQANPDKTILKALGPAATLEEMMTACQGVGGPGHKARVLMGK
WSKSSVVGWPTVRERMRAEPAADGVGAASRDLEKHGAITSSNTAATNAACAWLEAQEEEEVGFPVTPQVP
LRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWIYHTQGYFPDWQNYTPGPGVRYPLTFGWICYKLV
PVEPDKVEEANKGENTSLAHPVSLHGMDDPEREVLEWRFD SRLAFHHVARELHPEYFKNCTSEPVDPRLP
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TGPKE [SEQ ID NO: 83]

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Fig.21.



DNA sequence of insert

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 CGGACCCCAACCCCAAGGAGGTGGTGTGGGAAACGTGACCGAGTACTTCAACATGTGGAAGAATAACATG
 GTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCAAGTCCCTGAAGCCCTGCGTGAAGCTGACGCC
 TCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACCAGCAACGGCTGGA
 CCGGAGAGATTTCGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCACGACCTCGATCAGAGACAAGGTG
 CAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATGCCACCACCAAGAA
 CAAGACGACGCGTAATTTTCACTCATTCACTGCAACAGCAGCGTCATGACGCAGGCCTGCCCAAGGTGT
 CCTTCGAACCAATCCCGATCCATTACTGTGCCCCCTGCCGATTCGCGATCCTCAAGTGTAACAACAAGACC
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 CACCCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGTATCCGGTCGGACAACCTTCATGGACA
 ACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAACTGTACCCGGCCTAACAACAACACC
 CGTAAGGGCATCCACATCGGGCCTGGACGGGCCTTCTATGCCGCCCGCAAGATCATCGGCGACATCCGGCA
 GGCCCATTTGCAACCTCTCCCGCGCCAGTGGAATAACACCCTGAAGCAGATCGTGATCAAGCTGAGAGAGC
 ACTTTGGAAACAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCCGAGATCGTGCGGCACTCCTTC
 AACTGCGGGGGCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGAACGGCACCGAGGG
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 AGGTGGGAAAGGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAACATCACCGGCCTG
 CTGCTCACCAAGAGACGGGGGCACCGAGGGCAACGGCACGGAGAACGAGACGGAGATCTTCAGGCCCCGGCGG
 CGGCGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTGGAGCCGCTCGGCG
 TGGCCCCACCCGGGCCAAGCGCGCTCGTGACAGAAATGGGCCCCATCAGTCCCATCGAGACCGTGCCG
 GTGAAGCTGAAACCCGGGATGGACGGCCCCAAGGTCAAGCAGTGGCCACTCACCGAGGAGAAGATCAAGGC
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 ACACCCCGTGTTTGCCATCAAGAAGAAGGACAGCACCAAGTGGCGCAAGCTGGTGGATTTCGGGAGCTG
 AATAAGCGGACCCAGGATTTCTGGGAGGTCCAGCTGGGCATCCCCATCCGGCCGGCCTGAAGAAGAAGAA
 GAGCGTGACCGTGCTGGACGTGGGCGACGCTTACTTCAGCGTCCCTCTGGACGAGGACTTTAGAAAGTACA
 CCGCCTTTACCATCCCATCTATCAACAACGAGACCCCTGGCATCAGATATCAGTACAACGTCCTCCCCAG
 GGCTGGAAGGGCTCTCCCGCCATTTTCAGAGCTCCATGACCAAGATCCTGGAGCCGTTTCGGAAGCAGAA
 CCCCGATATCGTCATCTACCAGTACATGGACGACCTGTACGTGGGCTCTGACCTGGAAATCGGGCAGCATC

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Fig.21 (Cont I).

GCACGAAGATTGAGGAGCTGAGGCAGCATCTGCTGAGATGGGGCCTGACCACTCCGGACAAGAAGCATCAG
AAGGAGCCGCCATTCTGAAGATGGGCTACGAGCTCCATCCCGACAAGTGGACCGTGCAGCCTATCGTCCT
CCCCGAGAAGGACAGCTGGACCGTGAACGACATCCAGAAGCTGGTGGGCAAGCTCAACTGGGCTAGCCAGA
TCTATCCCGGGATCAAGGTGCGCCAGCTCTGCAAGCTGCTGCGCGGCACCAAGGCCCTGACCGAGGTGATT
CCCCTCACGGAGGAAGCCGAGCTCGAGCTGGCTGAGAACCGGGAGATCCTGAAGGAGCCCGTGCACGGCGT
GTACTATGACCCCTCCAAGGACCTGATCGCCGAAATCCAGAAGCAGGGCCAGGGGCAGTGGACATACCAGA
TTTACCAGGAGCCTTTCAAGAACCTCAAGACCGGCAAGTACGCGCCGATGAGGGGCGCCACACCAACGAT
GTCAAGCAGCTGACCGAGGCGTCCAGAAGATCACGACCGAGTCCATCGTGATCTGGGGGAAGACACCCAA
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CCGAGTGGGAGTTCGTGAATACACCTCCTCTGGTGAAGCTGTGGTACCAGCTCGAGAAGGAGCCCATCGTG
GGCGCGGAGACATTCTACGTGGACGGCGCGGCCAACC CGCAAACAAAGCTCGGAAGGCCGGGTACGTCAC
CAACCGGGGGCCGCCAGAAGGTCTGACCCCTGACCGACACCACCAACCAGAAGACGGAGCTGCAGGCCATCT
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GGTCTACCTCGCCTGGGTCCCGGCCCATAGGGCATTGGCGGCAACGAGCAGGTGACAAAGCTGGTGAGTG
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GGAGAGAGAAGTGTGTAGAGTGGAGTTTGACAGCCGCTTAGCATTTTCATCACGTGGCCCGAGAGCTGCATC
CGGAGTACTTCAAGAACTGCATGGGTGCCGAGCTTCGGTACTGTCTGGTGGAGAGCTGGACAGATGGGAG
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TGAACGGTTTGCCGTGAACCCAGGCCTGCTGGAACATCTGAGGGATGTCGCCAGATCCTGGGGCAATTGC
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CACCAGAGGATCGAGATTAAGGATACCAAGGAGGCCTTGACAAAATTGAGGAGGAGCAAAACAAGAGCAA
GAAGAAGGCCCAGCAGGCAGCTGCTGACACTGGGCATAGCAACCAGGTATCACAGAACTATCCTATTGTCC
AAAACATTCAGGGCCAGATGGTTCATCAGGCCATCAGCCCCCGGACGCTCAATGCCTGGGTGAAGGTTGTC
GAAGAGAAGGCCTTTTCTCCTGAGGTTATCCCCATGTTCTCCGCTTTGAGTGAGGGGGCCACTCCTCAGGA
CCTCAATACAATGCTTAATACCGTGGGCGGCCATCAGGCCGCCATGCAAATGTTGAAGGAGACTATCAACG
AGGAGGCAGCCGAGTGGGACAGAGTGCATCCCGTCCACGCTGGCCCAATCGCGCCCGGACAGATGCGGGAG
CCTCGCGGCTCTGACATTGCCGGCACCACCTCTACACTGCAAGAGCAAATCGGATGGATGACCAACAATCC
TCCCATCCCAGTTGGAGAAATCTATAAACGGTGGATCATCCTGGGCCTGAACAAGATCGTGCGCATGTACT
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Aminoacid sequence of insert

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QKEYALFYNLDVPIDDDNATTKNKTTRNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNKNT
FDGKGLCTNVSTVQCTHGIRPVVSTQLLLNGSLAEEEVVIRSDNFMNTKTIIVQLNESVAINCTRPNNT
RKGIHIGPGRAFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVIKLREHFGNKTIFNQSSGGDPEIVRHSF
NCGGEFFYCDTTQLFNSTWNGTEGNTEGNSTITLPCRKQIINMWQEVGKAMYAPPIGGQIRCSSNITGL
LLTRDGGTEGNTEGNETEIFRPGGDMRDNRSELYKYKVVKVEPLGVAPTRAKRRVVQRMGPISPIETVP
VKLKPGMDGPKVKQWPLTEEKIKALVEICTEMEKEGKISKIGPENPYNTPVFAIKKDDSTKWRKLVDFREL
NKRTQDFWEVQLGIPHPAGLKKKSVTVLVDGDAYFSVPLDEDFRKYTAFTIPSINNETPGIRYQYNVLPQ
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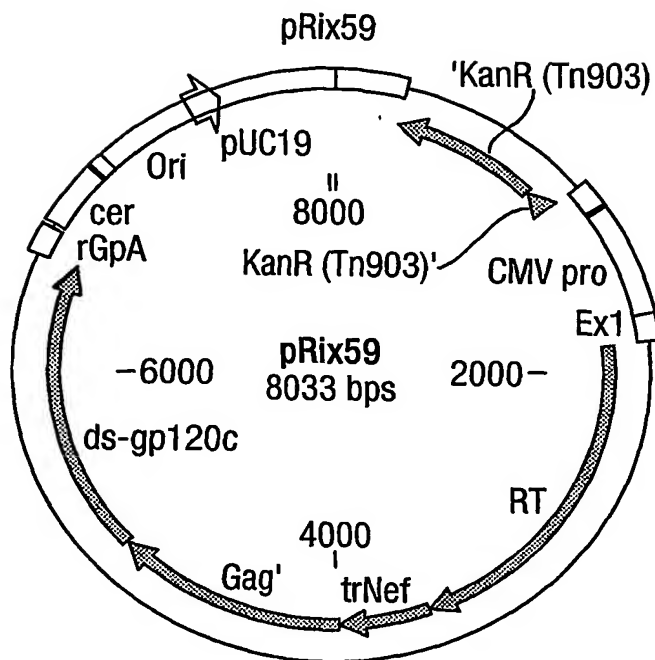
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Fig.21 (Cont II).

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KIRLRPGGKKKYKLKHIVWASRELERFAVNPGLLETSEGCRQILGQLQPSLQTGSEELRSYNTVATLYCV
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EEKAFSPEVIPMFSALSEGATPQDLNMLNTVGGHQAAMQMLKETINEEAAEWDRVHPVHAGPIAPGQMR
PRGSDIAGTTSTLQEQIGWMTNNPPIPVGEIYKRWIILGLNKIVRMYSPSILDIRQGPKPEFRDYVDRFY
KTLRAEQASQEVKNWMTETLLVQNANPDCKTILKALGPAATLEEMMTACQGVGGPGHKARVL [SEQ ID
NO: 85]

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Fig.22.



DNA sequence of insert

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 AGATCAGCAAGATCGGGCCGGAGAACCATAACAACCCCCGTGTTGCCATCAAGAAGAAGGACAGCACC
 AAGTGGCGCAAGCTGGTGGATTTCGGGAGCTGAATAAGCGGACCCAGGATTTCTGGGAGGTCCAGCTGGG
 CATCCCCCATCCGGCCGGCCTGAAGAAGAAGAAGAGCGTGACCGTGCTGGACGTGGGCGACGCTTACTTCA
 GCGTCCCTCTGGACGAGGACTTTAGAAAGTACACCGCCTTACCATCCCATCTATCAACAACGAGACCCCT
 GGCATCAGATATCAGTACAACGTCTCCCCAGGGCTGGAAGGGCTCTCCCGCCATTTTCCAGAGCTCCAT
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 TGGGGCTGACCACTCCGGACAAGAAGCATCAGAAGGAGCCGCCATTCTGAAGATGGGCTACGAGCTCCA
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 CGAGTCCATCGTGATCTGGGGGAAGACACCCAAGTTCAAGCTGCCTATCCAGAAGGAGACCTGGGAGACGT
 GGTGGACCGAATATTGGCAGGCCACCTGGATTCCCGAGTGGGAGTTCTGTGAATACACCTCCTCTGGTGAAG
 CTGTGGTACCAGCTCGAGAAGGAGCCCATCGTGGGCGCGGAGACATTCTACGTGGACGGCGCGGCCAACC
 CGAAACAAAGCTCGGGAAGGCCGGGTACGTACCAACCGGGGCCGAGAGGTCGTCACCTGACCGACA
 CCACCAACCAGAAGACGGAGCTGCAGGCCATCTATCTCGTCTCCAGGACTCCGGCCTGGAGGTGAACATC
 GTGACGGACAGCCAGTACGCGCTGGGCATTATTACGGCCCAGCCGGACCGAGTCCGAGAGCGAAGTGGTGAA
 CCAGATTATCGAGCAGCTGATCAAGAAAGAGAAGGTCTACCTCGCCTGGGTCCCGGCCATAAGGGCATTG
 GCGGCAACGAGCAGGTGACAAAGCTGGTGAAGTGGGGGATTAGAAAGGTGCTGATGGTGGGTTTTCCAGTC
 ACACCTCAGGTACCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTAAAGAAAA
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 AAGGCTACTTCCCTGATTGGCAGAACTACACACCAGGGCCAGGGGTGAGATATCCACTGACCTTTGGATGG
 TGCTACAAGCTAGTACCAAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGT
 ACACCTGTGAGCCTGCATGGGATGGATGACCCGGAGAGAGAAGTGTAGAGTGGAGGTTTGACAGCCGCC

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Fig.22 (Cont I).

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 GCTCAAGCATATCGTGTGGGCCTCGAGGGAGCTTGAACGGTTTGCCGTGAACCCAGGCGTGTGGAAACAT
 CTGAGGGATGTCGCCAGATCCTGGGGCAATTGCAGCCATCCCTCCAGACCGGGAGTGAAGAGCTGAGGTCC
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 GGACAAAATTGAGGAGGAGCAAAACAAGAGCAAGAAGAAGGCCAGCAGGCAGCTGCTGACACTGGGCATA
 GCAACCAGGTATCACAGAACTATCCTATTGTCCAAAACATTAGGGCCAGATGGTTCATCAGGCCATCAGC
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 CCGCCATGCAAATGTTGAAGGAGACTATCAACGAGGAGGCAGCCGAGTGGGACAGAGTGCATCCCGTCCAC
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 CGTGAGCACCCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGTATCCGGTCCGACAACCTTCA
 TGGACAACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAAGTGTACCCGGCCTAACAAC
 AACACCCGTAAGGGCATCCACATCGGGCCTGGACGGGCCTTCTATGCCGCCGCAAGATCATCGGCGACAT
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 TCCTTCAACTGCGGGGGCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGAACGGCAC
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 GGCAGGAGGTGGGAAGGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAACATCACC
 GGCCTGCTGCTCACCAGAGACGGGGCACCGAGGGCAACGGCACGGAGAACGAGACGGAGATCTTCAGGCC
 CGGCGGGCGGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTGGAGCCGC
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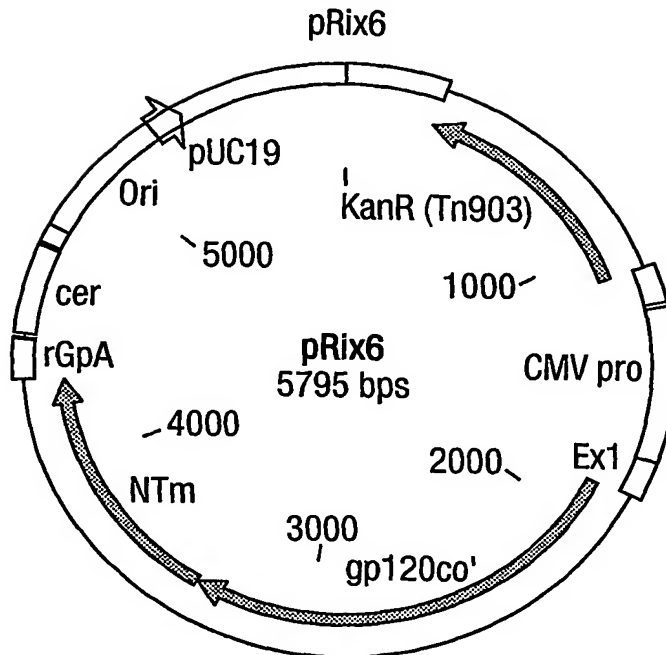
Aminoacid sequence of insert

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 GIRYQYNVLPQGWKGSFAIFQSSMTKILEPFRKQNPDIVIYQYMDLYVGSdleIGQHRTKIEELRQHLLR
 WGLTTPDKKHQKEPFLKMGYELHPDKWTVQPIVLPEKDSWTVNDIQKLVGKLNWASQIYPGIKVRQLCKL
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 VTDSQYALGIIQAQPDQSESELVNQIIIEQLIKKEKVYLAWVPAHKGIGGNEQVDKLVSAGIRKVLVGVFPV
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 EPFRDYVDRFYKTLRAEQASQEVKNWMTETLLVQANPDKTILKALGPAATLEEMMTACQGVGGPGHKAR

Fig.22 (Cont II).

VLMAEQLWVTVYYGVPVWKEATTTLCASDAKAYDTEVHNWATHACVPTDPNPQEVVLGNVTEYFNMWKN
NMVDQMHEDIISLWDQSLKPCVKLTPLCVTLDCDDVNTTNSTTTTSSNGWTGEIRKGEIKNCSFNITTSIRD
KVQKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNN
KTFDGKGLCTNVSTVQCTHGIRPVVSTQLLNGSLAEEEVVIRSDNFMONTKTIIVQLNESVAINCTRPNN
NTRKGIHIGPGRAFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVIKLREHFGNKTIFNQSSGGDPEIVRH
SFNCGGEFFYCDTTQLFNSTWNGTEGNNTEGNSTITLPCRKQIINMWQEVGKAMYAPPIGGQIRCSSNIT
GLLLTRDGGTEGNGTENETEIFRPGGGDMRDNWRSELYKYKVVKVEPLGVAPTRAKRRVVQR [SEQ ID
NO: 87]

Fig.23.



DNA sequence of insert

ATGAAGGTCAAGGAGACCAGAAAGAACTACCAGCATCTGTGGCGCTGGGGCACCATGCTCCTGGGAATGCT
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 CGACCACCTCTTCTGCGCGAGCGACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCAT
 GCTTGCGTGCCTACGACCCCCAACCCAGGAGGTGGTGTCTGGGAAACGTGACCGAGTACTTCAACATGTG
 GAAGAATAACATGGTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCAGTCCCTGAAGCCCTGCG
 TGAAGCTGACGCCTCTCTGCGTGACACTGGAGCTGTGACGACGTCAACACCACCAACAGCACTACCACCACC
 AGCAACGGCTGGACCGGAGAGATTTCGGAAGGGCGAGATCAAGAAGTGTCTTCAATATCACGACCTCGAT
 CAGAGACAAGGTGCAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATG
 CCACCACCAAGAACAAGACGACGCGTAATTTTCACTGCAACAGCAGCGTCATGACGACGAGGCC
 TGCCCCAAGGTGTCTTCGAACCAATCCCGATCCATTACTGTGCCCTGCCGATTTCGCGATCCTCAAGTG
 TAACAACAAGACCTTCGACGGGAAGGGCCTGTGCACCAACGTGACGACGGTGCAGTGCACCCATGGCATCC
 GCCCCGTCGTGAGCACCCAGCTGCTGTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGTATCCGGTCCGGAC
 AACTTCATGGACAACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAACTGTACCCGGCC
 TAACAACAACACCCGTAAGGGCATCCACATCGGGCCTGGACGGGCCTTCTATGCCGCCCGCAAGATCATCG
 GCGACATCCGGCAGGCCCCATTGCAACCTCTCCCGCGCCAGTGGAATAACACCCTGAAGCAGATCGTGATC
 AAGCTGAGAGAGCACTTTGGAACAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCCGAGATCGT
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 AACATGTGGCAGGAGGTGGGAAAGGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAA
 CATCACCGGCTGTCTGCTCACCAGAGACGGGGGCACCGAGGGCAACGGCACGGAGAACGAGACGGAGATCT
 TCAGGCCCGGCGGCGGCGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGTGGTGAAGGTG
 GAGCCGCTCGGCGTGGCCCCCACC CGGGCCAAGCGCCGCTCGTGCAGAGAATGGGTGGCAAGTGGTCAAA
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 GAGCAGCATCTCGAGACCTGGAAAAACATGGAGAGATCACAAGTAGCAATACAGCAGCTACCAATGCTGCT
 TGTGCCTGGCTAGAAGCACAAGAGGAGGAGGAGGTGGGTTTTCCAGTCACACCTCAGGTACCTTTAAGACC
 AATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTTAAAGAAAAGGGGGGACTGGAAGGGCTAATTC
 ACTCCAACGAAGACAAGATATCCTTGATCTGTGGATCTACCACACACAAGGCTACTTCCCTGATTGGCAG
 AACTACACACCAGGGCCAGGGGTGAGATATCCACTGACCTTTGGATGGTGTACAAGCTAGTACCAGTTGA
 GCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGTACACCCTGTGAGCCTGCATGGAA

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Fig.23 (Cont).

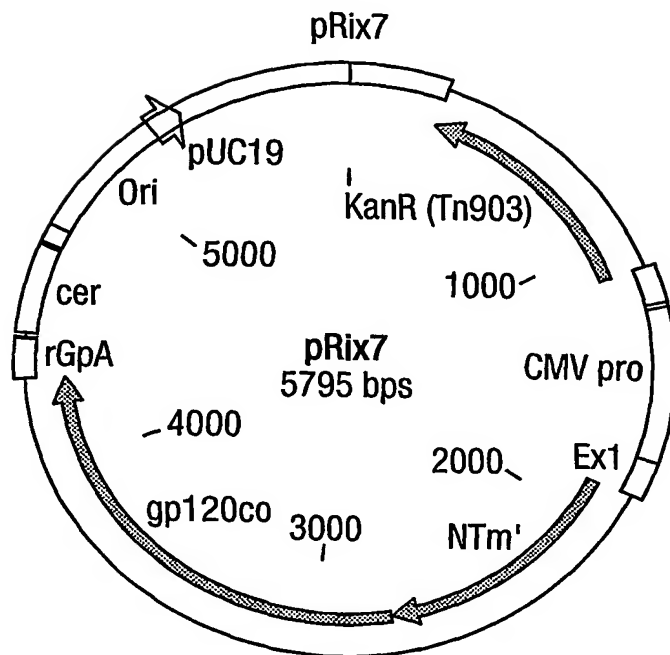
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TCCAGGAAGTCAGCCTAAACTGCTTGTACCAATTGCTATTGTAAAAAGTGTGCTTTTCATTGCCAAGTTT
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GGCAGTCAGACTCATCAAGTTTCTCTATCAAAGCAACCCACCTCCCAATCCAAAGGGGAGCCGACAGGCCC
GAAGGAATAA [SEQ ID NO: 88]

Aminoacid sequence of insert

MKVKETRKNYQHLWRWGTM L L G M L M I C S A A E Q L W V T V Y Y G V P V W K E A T T L F C A S D A K A Y D T E V H N V W A T H
A C V P T D P N P Q E V V L G N V T E Y F N M W K N N M V D Q M H E D I I S L W D Q S L K P C V K L T P L C V T L D C D D V N T T N S T T T T
S N G W T G E I R K G E I K N C S F N I T T S I R D K V Q K E Y A L F Y N L D V V P I D D D N A T T K N K T T R N F R L I H C N S S V M T Q A
C P K V S F E P I P I H Y C A P A G F A I L K C N N K T F D G K G L C T N V S T V Q C T H G I R P V V S T Q L L L N G S L A E E E V V I R S D
N F M D N T K T I I V Q L N E S V A I N C T R P N N N T R K G I H I G P G R A F Y A A R K I I G D I R Q A H C N L S R A Q W N N T L K Q I V I
K L R E H F G N K T I K F N Q S S G D P E I V R H S F N C G G E F F Y C D T T Q L F N S T W N G T E G N N T E G N S T I T L P C R I K Q I I
N M W Q E V G K A M Y A P P I G G Q I R C S S N I T G L L L T R D G G T E G N G T E N E T E I F R P G G G D M R D N W R S E L Y K Y K V V K V
E P L G V A P T R A K R R V V Q R M G G K W S K S S V V G W P T V R E R M R R A E P A A D G V G A A S R D L E K H G A I T S S N T A A T N A A
C A W L E A Q E E E E V G F P V T P Q V P L R P M T Y K A A V D L S H F L K E K G G L E G L I H S Q R R Q D I L D L W I Y H T Q G Y F P D W Q
N Y T P G P G V R Y P L T F G W C Y K L V P V E P D K V E E A N K G E N T S L L H P V S L H G M D D P E R E V L E W R F D S R L A F H H V A R
E L H P E Y F K N C T S E P V D P R L E P W K H P G S Q P K T A C T N C Y C K K C C F H C Q V C F I T A A L G I S Y G R K K R R Q R R R P P Q
G S Q T H Q V S L S K Q P T S Q S K G E P T G P K E [SEQ ID NO: 89]

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Fig.24.



DNA sequence of insert

ATGGGTGGCAAGTGGTCAAAAAGTAGTGTGGTTGGATGGCCTACTGTAAGGGAAAGAATGAGACGAGCTGA
 GCCAGCAGCAGATGGGGTGGGAGCAGCATCTCGAGACCTGGAAAAACATGGAGCAATCACAAGTAGCAATA
 CAGCAGCTACCAATGCTGCTTGTGCCTGGCTAGAACACAAAGAGGAGGAGGAGGTGGGTTTTCCAGTCACA
 CCTCAGGTACCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTTAAAGAAAAGGG
 GGGACTGGAAGGGCTAATTCACCTCCCAACGAAGACAAGATATCCTTGATCTGTGGATCTACCACACACAAG
 GCTACTTCCCTGATTGGCAGAACTACACACCAGGGCCAGGGTCAGATATCCACTGACCTTTGGATGGTGC
 TACAAGCTAGTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGTTACA
 CCCTGTGAGCCTGCATGGAATGGATGACCCTGAGAGAGAAGTGTTAGAGTGGAGGTTTGACAGCCGCCTAG
 CATTTTCATCACGTGGCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGCACCTAGTGAGCCAGTAGATCCT
 AGACTAGAGCCCTGGAAGCATCCAGGAAGTCAGCCTAAACTGCTTGTACCAATTGCTATTGTAAAAGTG
 TTGCTTTTCATTGCCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGGAGAC
 AGCGACGAAGACCTCCTCAAGGCAGTCAGACTCATCAAGTTTCTCTATCAAAGCAACCCACCTCCCAATCC
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 ACGGCGTGCCTGTGTGGAAGGAGGCCACGACCACCTCTTCTGCGCGAGCGACGCCAAGGCCTACGACACG
 GAAGTGCATAACGTGTGGGCGACGCATGCTTGCGTGCCTACGGACCCCAACCCCGAGGAGGTGGTGTGGG
 AAACGTGACCGAGTACTTCAACATGTGGAAGAATAACATGGTGGATCAGATGCACGAGGACATCATCTCTC
 TGTGGGACCAGTCCCTGAAGCCCTGCGTGAAGCTGACGCTCTCTGCGTGACACTGGACTGTGACGACGTC
 AACACCACCAACAGCACTACCACCACCAGCAACGGCTGGACCGGAGAGATTCGGAAGGGCGAGATCAAGAA
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 ATGTGGTCCCCATCGACGACGACAATGCCACCACCAAGAACAAGACGACGCGTAATTTAGACTCATTAC
 TGCAACAGCAGCGTCATGACGCGGCTGCCCCAAGGTGTCTTCAACCAATCCCGATCCATTACTGTGC
 CCCTGCCGGATTGCGGATCCTCAAGTGTAAACAAGACCTTCGACGGAAGGGCCTGTGCACCAACGTC
 GCACGGTGCAGTGCACCCATGGCATCCGCCCCGCTGAGCAGCCAGCTGCTGCTGAACGGGTCCCTGGCT
 GAGGAGGAGGTGGTGATCCGGTCGGACAACCTTCATGGACAACCAAGACAATCATCGTGACGCTGAACGA
 GTCTGTGGCGATTAACTGTACCCGGCCTAACAACAACACCCGTAAGGGCATCCACATCGGGCCTGGACGG
 CCTTCTATGCCGCCCCGAAGATCATCGGCGACATCCGGCAGGCCATTGCAACCTCTCCCGCGCCAGTGG
 AATAACACCCTGAAGCAGATCGTGATCAAGCTGAGAGAGCACTTTGGAAACAAGACCATCAAGTTCAATCA
 GAGTTCTGGCGGAGACCCGAGATCGTGCGGCACTCCTTCAACTGCGGGGCGAGTTCTTCTACTGCGATA
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Fig.24 (Cont).

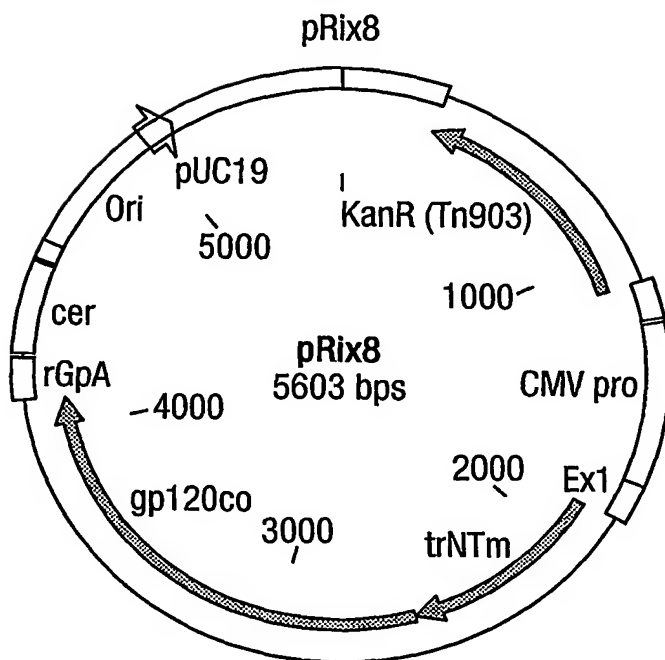
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ACGGCACGGAGAACGAGACGGAGATCTTCAGGCCCCGGCGGCGGCGACATGAGGGATAACTGGCGGAGCGAG
CTGTACAAGTACAAGGTGGTGAAGGTGGAGCCGCTCGGCGTGGCCCCACCCGGGCCAAGCGCCGCGTCGT
GCAGAGATGA [SEQ ID NO: 90]

Aminoacid sequence of insert

MGGKWSKSSVVGWPTVRERMRAEPAADGVGAASRDLEKHGAITSSNTAATNAACAWLEAQEEEEVGFVPT
PQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWYHTQGYFPDWQNYTPGPGVRYPLTFGWC
YKLVPEPDKVEEANKGENTSLLHPVSLHGMDPEREVLEWRFD SRLAFHHVARELHPEYFKNCTSEPVDP
RLEPWKHPGSQPKTACTNCYCKKCCFHCQVCFITAALGISYGRKKRRQRRRPPQGSQTHQVSLSKQPTSQS
KGEPTGPKEMKVKETRKNYQHLWRWGTMLLGLMLICSAAEQLWVTVYYGVPVWKEATTTLCASDAKAYDT
EVHNVWATHACVPTDPNPQEVVLGNVTEYFNMWKNNMVDQMHEDIISLWDQSLKPCVKLTPLCVTLDCDDV
NTTNSTTTTSSNGWTGEIRKGEIKNCSFNITTSIRDKVQKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIH
CNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNNKTFDGKGLCTNVSTVQCTHGIRPVVSTQLLNGLA
EEEVVIRSDNFMNDTKTIIIVQLNESVAINCTRPNNNTRKGIHIGPGRFYAARKIIGDIRQAHCNLSRAQW
NNTLKQIVIKLREHFGNKTIFNQSSGGDPEIVRHSFNCGGEFFYCDTTQLFNSTWNGTEGNNTGNSTIT
LPCRIKQIINMWQEVGKAMYAPPIGGQIRCSSNITGLLLTRDGGTEGNGTENETEIFRPGGGDMRDNRSE
LYKYKVVKVEPLGVAPTRAKRRVVQR [SEQ ID NO: 91]

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Fig.25.



DNA sequence of insert

ATGGTGGGTTTTCCAGTCACACCTCAGGTACCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAG
 CCACTTTTTTAAAAGAAAAGGGGGGACTGGAAGGGCTAATTCCTCCCAACGAAGACAAGATATCCTTGATC
 TGTGGATCTACCACACACAAGGCTACTTCCCTGATTGGCAGAATAACACACCAGGGCCAGGGGTCAGATAT
 CCACTGACCTTTGGATGGTGCTACAAGCTAGTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGG
 AGAGAACACCAGCTTGTTACACCCTGTGAGCCTGCATGGAATGGATGACCCCTGAGAGAGAAGTGTTAGAGT
 GGAGGTTTGACAGCCGCTAGCATTTCATCACGTGGCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGC
 ACTAGTGAGCCAGTAGATCCTAGACTAGAGCCCTGGAAGCATCCAGGAAGTCAGCCTAAACTGCTTGATC
 CAATTGCTATTGTAAAAAGTGTGCTTTCATTGCCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCT
 ATGGCAGGAAGAAGCGGAGACAGCGACGAAGACCTCCTCAAGGCAGTCAGACTCATCAAGTTTCTCTATCA
 AAGCAACCCACCTCCCAATCCAAAGGGGAGCCGACAGGCCCGAAGGAAATGAAGGTCAAGGAGACCAAGAA
 GAACTACCAGCATCTGTGGCGCTGGGGCACCATGCTCCTGGGAATGCTGATGATCTGCTCCGCCGCCGAGC
 AGCTGTGGGTACCGTCTACTACGGCGTGCTGTGTGGAAGGAGGCCACGACCACCCTCTTCTGCGCGAGC
 GACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCATGCTTGCGTGCTTACGGACCCCAA
 CCCCCAGGAGGTGGTGCTGGGAAACGTGACCGAGTACTTCAACATGTGGAAGAATAACATGGTGGATCAGA
 TGCACGAGGACATCATCTCTGTGGGACCAGTCCCTGAAGCCCTGCGTGAAGCTGACGCCTCTCTGCGTG
 AACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACCAGCAACGGCTGGACCGGAGAGAT
 TCGGAAGGGCGAGATCAAGAAGTCTCCTTCAATATCACGACCTCGATCAGAGACAAGGTGCAGAAGGAAT
 ACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATGCCACCACCAAGAACAAGACGACG
 CGTAATTTTCAAGTCAATTCAGTCAACAGCAGCGTCATGACGCAGGCCTGCCCAAGGTGTCCTTCGAACC
 AATCCCGATCCATTACTGTGCCCCTGCCGGATTTCGCGATCCTCAAGTGTAAACAACAAGACCTTCGACGGGA
 AGGGCCTGTGCACCAACGTCAGCACGGTGCAGTGCACCCATGGCATCCGCCCCGTCGTGAGCACCCAGCTG
 CTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGATCCGGTCGGACAACCTTCATGGACAACACCAAGAC
 AATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAACTGTACCCGGCCTAACAACAACACCCGTAAGGGCA
 TCCACATCGGGCCTGGACGGGCCTTCTATGCCGCCCGCAAGATCATCGGCGACATCCGGCAGGCCCATTCG
 AACCTCTCCCGCGCCAGTGGAATAACACCCTGAAGCAGATCGTGATCAAGCTGAGAGAGCACTTTGGAAA
 CAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCCGAGATCGTGCGGCACTCCTTCAACTGCGGGG
 GCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGAACGGCACCGAGGGCAACAACACA
 GAGGGAAACTCCACTATCACCCCTCCCTTGCCGCTCAAGCAGATCATCAACATGTGGCAGGAGGTGGGAAA
 GGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAACATCACCGGCCTGCTGCTACCA
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Fig.25 (Cont).

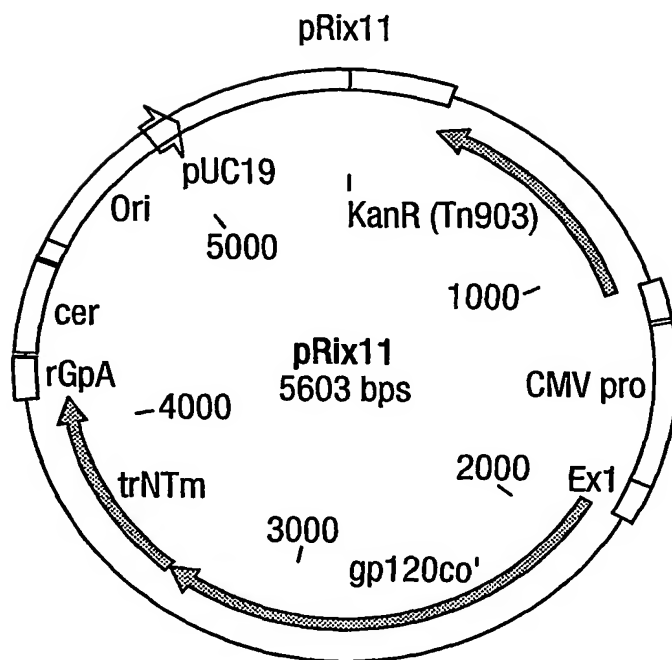
AGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTGGAGCCGCTCGGCGTGGCCCCCAC
CCGGGCCAAGCGCCGCGTCGTGCAGAGATGA [SEQ ID NO: 92]

Aminoacid sequence of insert

MVGFPVTPQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDLWIYHTQGYFPDWQNYTPGPGVRY
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TSEPVDPRLEPWKHPGSQPKTACTNCYCKKCCFHCQVCFITAALGISYGRKKRRQRRRPQGSQTHQVSLS
KQPTSQSKGEPTGPKEMKVKETRKNYQHLWRWGTMLLGLMLICSAAEQLWVTVYYGVPVWKEATTLFCAS
DAKAYDTEVHNWATHACVPTDNPQEVVLGNVTEYFNMWKNNMVDQM HEDIISLWDQSLKPCVKLTPLCV
TLDCDDVNTTNSTTTTSN GWTGEIRKGEIKNCSENIITSIRDKVQKEYALFYNLDVVPIDDDNATTKNKT
RNFRLIHCNSSVMTQACPKVSFEPIPIHYCAPAGFAILKCNKTFDGKGLCTNVSTVQCTHGIRPVVSTQL
LLNGSLAE E EVVIRSDNFM DNTKTIIVQLNESVAINCTRPNNNTRKGIHIGPGRAFYAARKIIGDIRQAH
NLSRAQWNNTLKQIVIKLREHFGNKTIFNQSSGGDPEIVRHSFNCGGEFFYCDTTQLFNSTWNGTEGNT
EGNSTITLPCRIKQIINMWQEVGKAMYAPPIGGQIRCSSNITGLLLTRDGGTEGNGTENETEIFRPGGGDM
RDNWRSELYKYKVVKVEPLGVAPTRAKRRVVQR [SEQ ID NO: 93]

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Fig.26.



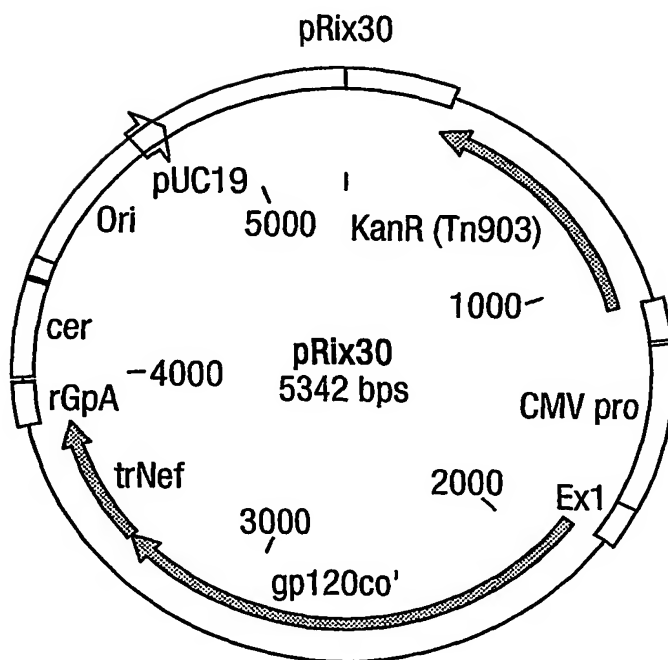
DNA sequence of insert

Aminoacid sequence of insert

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 SNGWTGEIRKGEIKNCSFNITTSIRDKVQKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQA
 CPKVSFEPIPIHYCAPAGFAILKCNNKTFDGKGLCTNVSTVQCTHGIRPVVSTQLLLNGSLAEDEVVIRSD
 NFMNTKTIIVQLNESVAINCTRPNNNTRKGIHIGPGRFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVI
 KLEHFGNKTIFKNQSSGGDPEIVRHSFNCGGEFFYCDTTQLFNSTWNGTEGNNTTEGNSTITLPCRIKQII
 NMWQEVGKAMYAPPIGGQIRCSSNITGLLLTRDGGTEGNGTENETEIFRPGGGDMRDNRSELYKYKVVKV
 EPLGVAPTRAKRRVVQRMVGFVTPQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWYHTQ
 GYFPDWQNYTPGPGVRYPLTFGWCYKLVPEPDKVEEANKGENTSLLHPVSLHGMDDPEREVLEWRFD SRL
 AFHHVARELHPEYFKNCTSEPVDPRLPEPWKHPGSQPKTACTNCYCKCCFHCQVCFITAALGISYGRKKRR
 QRRRPPQGSQTHQVSLSKQPTSQSKGEPTGPKE [SEQ ID NO: 94]

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Fig.27.



DNA sequence of insert

ATGAAGGTCAAGGAGACCAGAAAGAACTACCAGCATCTGTGGCGCTGGGGCACCATGCTCCTGGGAATGCT
 GATGATCTGCTCCGCCGCCGAGCAGCTGTGGGTACCGTCTACTACGGCGTGCCTGTGTGGAAGGAGGCCA
 CGACCACCTCTTCTGCGCGAGCGACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCAT
 GCTTGCGTGCCTACGGACCCCAACCCCCAGGAGGTGGTGTCTGGGAAACGTGACCGAGTACTTCAACATGTG
 GAAGAATAACATGGTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCAGTCCCTGAAGCCCTGCG
 TGAAGCTGACGCCTCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACC
 AGCAACGGCTGGACCGGAGAGATTTCGGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCACGACCTCGAT
 CAGAGACAAGGTGCAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATG
 CCACCACCAAGAACAAGACGACGCGTAATTCAGACTCATTCACTGCAACAGCAGCGTCATGACGCAGGCC
 TGCCCCAAGGTGTCCTTCGAACCAATCCCGATCCATTACTGTGCCCTGCCGATTTCGCGATCCTCAAGTG
 TAACAACAAGACCTTCGACGGGAAGGGCCTGTGCACCAACGTCAGCACGGTGCAGTGCACCCATGGCATCC
 GCCCGTCTGTGAGCACCCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGTATCCGGTCCGAC
 AACTTCATGGACAACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAACTGTACCCGGCC
 TAACAACAACACCCGTAAGGGCATCCACATCGGGCCTGGACGGGCCTTCTATGCCGCCCCGAAGATCATCG
 GCGACATCCGGCAGGCCCATTCGAACCTCTCCCGCGCCAGTGGAAATAACACCCTGAAGCAGATCGTGATC
 AAGCTGAGAGAGCACTTTGGAAACAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCCGAGATCGT
 GCGGCACTCCTTCAACTGCGGGGGCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGA
 ACGGCACCGAGGGCAACAACACAGAGGGAACTCCACTATCACCTCCCTTGCCGCATCAAGCAGATCATC
 AACATGTGGCAGGAGGTGGGAAAGGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAA
 CATCACCGGCCCTGCTGCTCACCGAGACGGGGGCACCGAGGGCAACGGCACGGAGAACGAGACGGAGATCT
 TCAGGCCCCGGCGGGCGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTG
 GAGCCGCTCGGCGTGGCCCCCACCAGGGCCAAGCGCCGCGTCTGTCAGAGAATGGTGGGTTTTCCAGTCAC
 ACCTCAGGTACCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTTAAAGAAAAGG
 GGGGACTGGAAGGGCTAATTCATCTCCAACGAAGACAAGATATCCTTGATCTGTGGATCTACCACACACAA
 GGCTACTTCCCTGATTGGCAGAACTACACACCAGGGCCAGGGGTGAGATATCCACTGACCTTTGGATGGTG
 CTACAAGCTAGTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGTTAC
 ACCCTGTGAGCCTGCATGGAATGGATGACCCTGAGAGAGAAGTGTTAGAGTGGAGGTTTGACAGCCGCTA
 GCATTTTCATCACGTGGCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGCTAA [SEQ ID NO: 95]

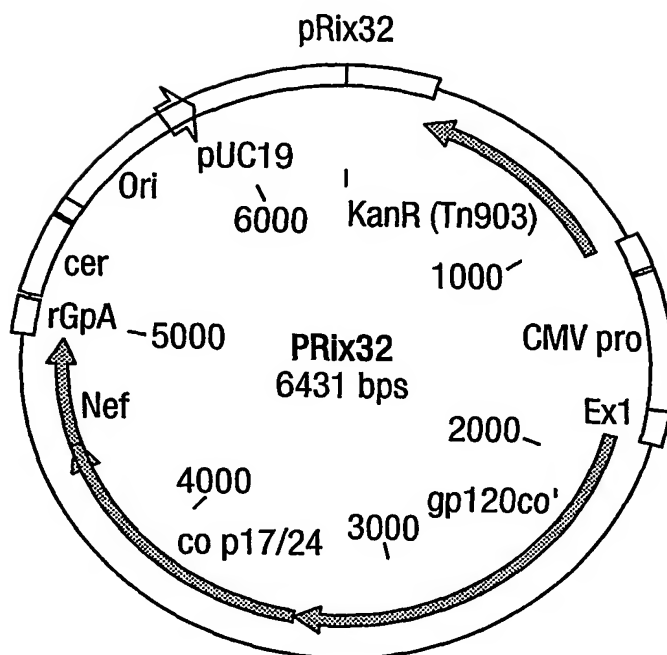
Fig.27 (Cont).

Aminoacid sequence of insert

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ACVPTDPNPQEVVLGNVTEYFNMWKNNMVDQMHEDIISLWDQSLKPCVKLTPLCVTLDCDDVNTTNSTTTT
SNGWTGEIRKGEIKNCSFNITTSIRDKVQKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQA
CPKVSFEPIPIHYCAPAGFAILKCNNKTFDGKGLCTNVSTVQCTHGIRPVVSTQLLNGSLAEEEVVIRSD
NFMDN TKTIIVQLNESVAINCTRPNNNTRKGIHIGPGRFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVI
KLREHFGNKTIFNQSSGGDPEIVRHSFNCGGEFFYCDTTQLFNSTWNGTEGNTEGNSTITLPCRIKQII
NMWQEVGKAMYAPPIGGQIRCSSNITGLLLTRDGGTEGNTEGNTEI FRPGGGDMRDNRSELYKYKVVKV
EPLGVAPTRAKRRVVQRMVGFVTPQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWIYHTQ
GYFPDWQNYTPGPGVRYPLTFGWCYKLVPEPDKVEEANKGENTSLLHPVSLHGMDDPEREVLEWRFD SRL
AFHHVARELHPEYFKNC [SEQ ID NO: 96]

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Fig.28.



DNA sequence of insert

ATGAAGGTCAAGGAGACCAGAAAGAACTACCAGCATCTGTGGCGCTGGGGCACCATGCTCCTGGGAATGCT
 GATGATCTGCTCCGCCCGCCGAGCAGCTGTGGGTACCGTCTACTACGGCGTGCTGTGTGGAAGGAGGCCA
 CGACCACCCTCTTCTGCGCGAGCGACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCAT
 GCTTGGCGTGCCCTACGGACCCCAACCCCCAGGAGGTGGTGTGGGAAACGTGACCGAGTACTTCAACATGTG
 GAAGAATAACATGGTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCAGTCCCTGAAGCCCTGCG
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 AGCAACGGCTGGACCGGAGAGATTTCGGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCACGACCTCGAT
 CAGAGACAAGGTGCAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATG
 CCACCACCAAGAACAAGACGACGCGTAATTTAGACTCATTCACTGCAACAGCAGCGTCATGACGAGGCC
 TGCCCCAAGGTGTCCTTCGAACCAATCCCGATCCATTACTGTGCCCTGCCGATTCCGCGATCCTCAAGTG
 TAACAACAAGACCTTCGACGGGAAGGGCCTGTGCACCAACGTGACGACGGTGCAGTGCACCCATGGCATCC
 GCCCCGTCGTGAGCACCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGTATCCGGTCCGAC
 AACTTCATGGACAACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAAGTGTACCCGGCC
 TAACAACAACACCCGTAAGGGCATCCACATCGGGCCTGGACGGGCCTTCTATGCCGCCCGCAAGATCATCG
 GCGACATCCGGCAGGCCCATTGCAACCTCTCCCGCGCCAGTGGAATAACACCCTGAAGCAGATCGTGATC
 AAGCTGAGAGAGCACTTTGGAAACAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCCGAGATCGT
 GCGGCACCTCCTTCAACTGCGGGGCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGA
 ACGGCACCGAGGGCAACAACACAGAGGGAAACTCCACTATCACCTCCCTTGCCGCATCAAGCAGATCATC
 AACATGTGGCAGGAGGTGGGAAAGGCCATGTATGCCCCCCCCATCGGGGGCCAGATCCGCTGCTCCTCCAA
 CATCACCGGCCTGCTGCTCACCAGAGACGGGGGACCGGAGGGCAACGGCACGGAGAACGAGACGGAGATCT
 TCAGGCCCCGGCGGCGGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTG
 GAGCCGCTCGGCGTGGCCCCCACCAGGGCCAAGCGCCGCTCGTGCAGAGAATGGGTGCCCGAGCTTCGGT
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 GAGGGATGTGCGCCAGATCCTGGGGCAATTGCAGCCATCCCTCCAGACCGGGAGTGAAGAGCTGAGGTCTTT
 GTATAACACAGTGGCTACCTCTACTGCGTACACCAGAGGATCGAGATTAAGGATACCAAGGAGGCCTTGG
 ACAAATTGAGGAGGAGCAAAACAAGAGCAAGAAGAAGGCCAGCAGGCAGCTGCTGACACTGGGCATAGC
 AACCAGGTATCACAGAACTATCCTATTGTCCAAAACATTACAGGGCCAGATGGTTTCATCAGGCCATCAGCCC
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Fig.28 (Cont).

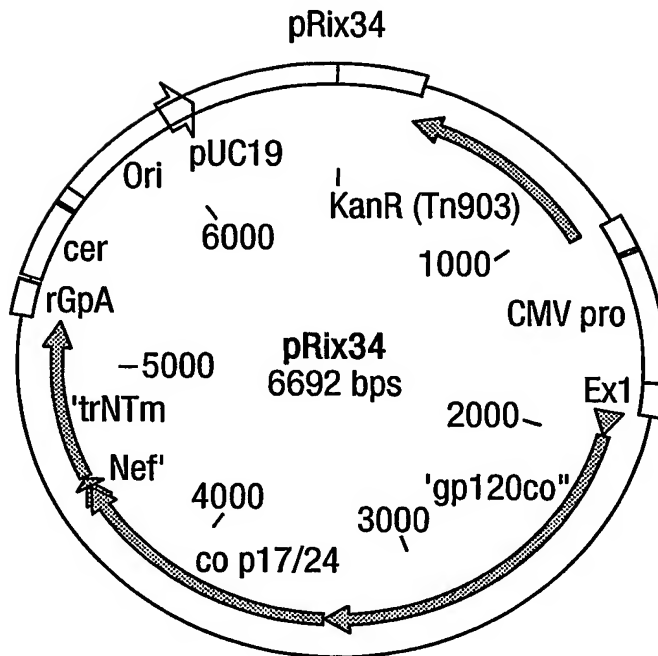
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 GCCATGCAAATGTTGAAGGAGACTATCAACGAGGAGGCAGCCGAGTGGGACAGAGTGCATCCCGTCCACGC
 TGGCCCAATCGCGCCCGGACAGATGCGGGAGCCTCGCGGCTCTGACATTGCCGGCACCACCTCTACACTGC
 AAGAGCAAATCGGATGGATGACCAACAATCCTCCCATCCCAGTTGGAGAAATCTATAAACGGTGGATCATT
 CTCGGTCTCAATAAAATTGTTAGAATGTACTCTCCGACATCCATCCTTGACATTAGACAGGGACCCAAAGA
 GCCTTTTAGGGATTACGTGACCGGTTTTATAAGACCCCTGCGAGCAGAGCAGGCCTCTCAGGAGGTCAAAA
 ACTGGATGACGGAGACACTCCTGGTACAGAACGCTAACCCCGACTGCAAAACAATCTTGAAGGCCTAGGC
 CCGGCTGCCACCCTGGAAGAGATGATGACCGCCTGTGAGGGAGTAGGCGGACCCGGACACAAAGCCAGAGT
 GTTGATGGTGGGTTTTCCAGTCACACCTCAGGTACCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATC
 TTAGCCACTTTTTAAAGAAAAGGGGGGACTGGAAGGGCTAATTCCTCCCAAAGAAAGACAAGATATCCTT
 GATCTGTGGATCTACCACACACAAGGCTACTTCCCTGATTGGCAGAACTACACACCAGGGCCAGGGGTCAG
 ATATCCACTGACCTTTGGATGGTGTCTACAAGCTAGTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATA
 AAGGAGAGAACACCAGCTTGTTACACCTGTGAGCCTGCATGGGATGGATGACCCGGAGAGAGAAGTGTTA
 GAGTGGAGGTTTGACAGCCGCTAGCATTTTCATCACGTGGCCGAGAGCTGCATCCGGAGTACTTCAAGAA
 CTGCTGA [SEQ ID NO: 97]

Aminoacid sequence of insert

MKVKETRKNYQHLWRWGTMLLGMMLICSAAEQLWVTVYYGVPVWKEATTTLFCASDAKAYDTEVHNVWATH
 ACVPTDPNPQEVVLGNVTEYFNMWKNMVDQMEDIISLWDQSLKPCVKLTPLCVTLDCDDVNTTNSTTTT
 SNGWTGEIRKGEIKNCSFNITTSIRDKVQKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQA
 CPKVSFEPIPIHYCAPAGFAILKCNNKTFDGKGLCTNVSTVQCTHGIRPVVSTQLLLNGSLAESEVVIRSD
 NFMONTKTIIVQLNESVAINCTRPNNNTRKGIHIGPGRFYAARKIIGDIRQAHCNLSRAQWNNTLKQIVI
 KLREHFGNKTIKFNQSSGGDPEIVRHSFNCGGEFFYCDTTQLFNSTWNGTEGNNTGNSTITLPCRKQII
 NMWQEVGKAMYAPPIGGQIRCSSNITGLLLTRDGGTEGNNGTENETEIFRPGGDMRDNRSELYKYKVVKV
 EPLGVAPTRAKRRVQRMGARASVLSGGELDRWEKIRLRPGGKKKYKLKHIVWASRELERFAVNPGLLET
 EGCRQILGQLQPSLTGSEELRSLYNTVATLYCVHQRIEIKDTKEALDKIEEQNKSKKKAQQAADTGHS
 NQVSQNYPIVQNIQGQMVHQAI SPRTLNAWVKVVEEKAFSPEVPMFSALSEGATPQDLNTMLNTVGGHQA
 AMQMLKETINEEAAEWDRVHPVHAGPIAPGQMREPRGSDIAGTTSTLQEQIGWMTNNPPIPVGEIYKRWII
 LGLNKIVRMYSPTSILDIRQGPKEPFRDYVDRFYKTLRAEQASQEVKNWMTETLLVQANANPDCKTILKALG
 PAATLEEMMTACQGVGGPGHKARVLMVGFVPTPQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSORRODIL
 DLWIYHTQGYFPDQWNYTPGPGVRYPLTFGWCYKLVPEPDKVEEANKGENTSLHPVSLHGMDDPEREVL
 EWRFD SRLAFHHVARELHPEYFKNC [SEQ ID NO: 98]

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Fig.29.



DNA sequence of insert

ATGAAGGTCAAGGAGACCAGAAAGAACTACCAGCATCTGTGGCGCTGGGGCACCATGCTCCTGGGAATGCT
 GATGATCTGCTCCGCCGCCGAGCAGCTGTGGGTACCGTCTACTACGGCGTGCTGTGTGGAAGGAGGCCA
 CGACCACCCTCTTCTGCGCGAGCGACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCAT
 GCTTGCCTGCTTACGGACCCCAACCCCAAGGAGTGGTGCTGGGAAACGTGACCGAGTACTTCAACATGTG
 GAAGAATAACATGGTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCAGTCCCTGAAGCCCTGCG
 TGAAGCTGACGCCTCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACC
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 CCACCACCAAGAACAAGACGACGCGTAATTTACAGACTCATTCACTGCAACAGCAGCGTCATGACGCAGGCC
 TGCCCCAAGGTGTCCTTCGAACCAATCCCGATCCATTACTGTGCCCTGCCGGATTTCGCGATCCTCAAGTG
 TAACAACAAGACCTTCGACGGGAAGGGCCTGTGCACCAACGTCAGCACGGTGCAAGTGACCCATGGCATCC
 GCCCCGTGCTGAGCACCCAGCTGCTGCTGAACGGGTCCCTGGCTGAGGAGGAGGTGGTGATCCGGTTCGGAC
 AACTTCATGGACAACACCAAGACAATCATCGTCCAGCTGAACGAGTCTGTGGCGATTAACTGTACCCGGCC
 TAACAACAACACCCGTAAGGGCATCCACATCGGGCCTGGACGGGCCTTCTATGCCGCCCGCAAGATCATCG
 GCGACATCCGGCAGGCCCATTGCAACCTCTCCCGCGCCAGTGGAATAACACCCTGAAGCAGATCGTGATC
 AAGCTGAGAGAGCACTTTGGAAACAAGACCATCAAGTTCAATCAGAGTTCTGGCGGAGACCCCGAGATCGT
 GCGGCACTCCTTCAACTGCGGGGGCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGA
 ACGGCACCGAGGGCAACAACACAGAGGGAACCTCCACTATCACCTCCCTTGCCGCATCAAGCAGATCATC
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 CATCACCGGCTGCTGCTCACCAGAGACGGGGGCACCGAGGGCAACGGCACGGAGAACGAGACGGAGATCT
 TCAGGCCCGCGCGCGCGACATGAGGGATAACTGGCGGAGCGAGCTGTACAAGTACAAGGTGGTGAAGGTG
 GAGCCGCTCGGCGTGGCCCCCACC CGGGCAAGCGCCGCGTCTGTCAGAGAATGGGTGCCCGAGCTTCGGT
 ACTGTCTGGTGGAGAGCTGGACAGATGGGAGAAAATTAGGCTGCGCCCGGGAGGCAAAAAGAAATACAAGC
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 GAGGGATGTCGCCAGATCCTGGGGCAATTGCAGCCATCCCTCCAGACCGGGAGTGAAGAGCTGAGGTCTT
 GTATAACACAGTGGCTACCTCTACTGCGTACACCAGAGGATCGAGATTAAGGATACCAAGGAGGCCTTGG
 ACAAATTGAGGAGGAGCAAAACAAGAGCAAGAAGAAGGCCAGCAGGCAGCTGCTGACACTGGGCATAGC
 AACCAGGTATCACAGAACTATCCTATTGTCCAAAACATTACAGGGCCAGATGGTTCATCAGGCCATCAGCCC
 CCGGACGCTCAATGCCTGGGTGAAGGTTGTGCAAGAGAAGGCCTTTTCTCCTGAGGTTATCCCCATGTTCT
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Fig.29 (Cont).

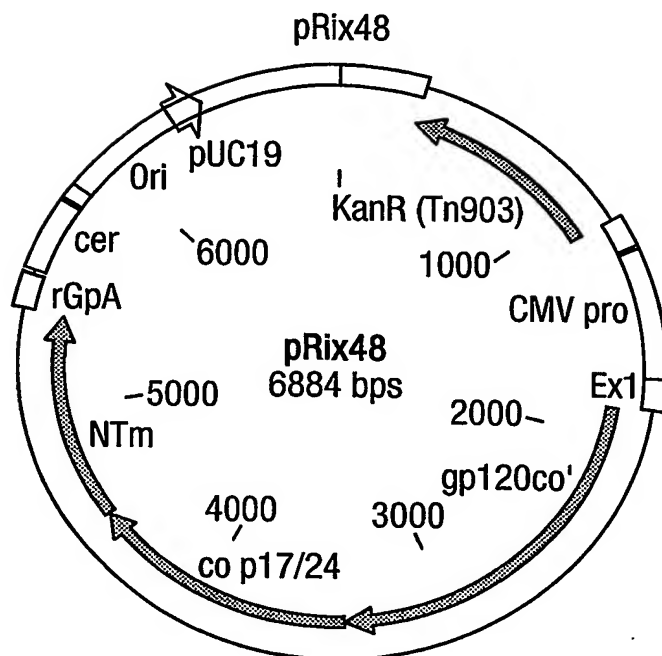
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CTCGGTCTCAATAAAATTGTTAGAATGTACTCTCCGACATCCATCCTTGACATTAGACAGGGACCCAAAGA
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ACTGGATGACGGAGACACTCCTGGTACAGAACGCTAACCCCGACTGCAAAACAATCTTGAAGGCAC TAGGC
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ATATCCACTGACCTTTGGATGGTGCTACAAGCTAGTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATA
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GAGTGGAGGTTTGACAGCCGCCTAGCATTTTCATCACGTGGCCCGAGAGCTGCATCCGGAGTACTTCAAGAA
CTGCACTAGTGAGCCAGTAGATCCTAGACTAGAGCCCTGGAAGCATCCAGGAAGTCAGCCTAAA ACTGCTT
GTACCAATTGCTATTGTAAAAAGTGTGCTTTTCATTGCCAAGTTTGTTCATAACAGCTGCCTTAGGCATC
TCCTATGGCAGGAAGAAGCGGAGACAGCGACGAAGACCTCCTCAAGGCAGTCAGACTCATCAAGTTTCTCT
ATCAAAGCAACCCACCTCCCAATCCAAAGGGGAGCCGACAGGCCCGAAGGAATAA [SEQ ID NO: 99]

Aminoacid sequence of insert

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SNGWTGEIRKGEIKNCSFNITTSIRDKVQKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQA
CPKVSFEPIPIHYCAPAGFAILKCNNKTFDGKGLCTNVSTVQCTHGIRPVVSTQLLNGSLAE EEVVIRSD
NEMDN TKTIIVQLNESVAINCTRPNNNTRKGIHIGPGRAFYAARKIIGDIRQAHCNLSRAQWNNNTLKQIVI
KLREHFGNKTIFNQSSGGDPEIVRHSFNCGGEFFYCDTTQLFNSTWNGTEGNNT EGNSTITLPCRIKQII
NMWQEVGKAMYAPPIGGQIRCSSNITGLLLTRDGGTEGNGTENETEIFRPGGGDMRDNRSELYKYKVVKV
EPLGVAPTRAKRRVQRMGARASVLSGGELDRWEKIRLRPGGKKYKLKHIVWASRELERFAVNPGLLETS
EGCRQILGQLQPSLQTGSEELRSYNTVATLYCVHQRIEIKDTKEALDKIEEEQNKSKKKAQQAADTGHS
NQVSQNYPIVQNIQGMVHQAI SPRTLNAWVKVVEEKAFSPEVIMFSALSEGATPQDLNTMLNTVGGHQA
AMQMLKETINEEAAEWDRVHPVHAGPIAPGQMREPRGSDIAGTTSTLQEQIGWMTNNPPIPVGEIYKRWII
LGLNKIVRMYSPTSILDIRQGPKEPFRDYVDRFYKTLRAEQASQEVKNWMTETLLVQNANPDCKTILKALG
PAATLEEMMTACQGVGGPGHKARVLMVGFVPTQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDIL
DLWIYHTQGYFPDWQNYTPGPGVRYPLTFGW CYKLVPEPDKVEEANKGENTSLHPVSLHGMDDPEREVL
EWRFD SRLAFHHVARELHPEYFKNCTSEPVDPRLEPWKHPGSQPKTACTNCYCKKCCFHCQVCFITAALGI
SYGRKKRRQRRRPPQGSQTHQVSLSKQPTSQSKGEPTGPKE [SEQ ID NO: 100]

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Fig.30.



DNA sequence of insert

ATGAAGGTCAAGGAGACCAGAAAGAACTACCAGCATCTGTGGCGCTGGGGCACCATGCTCCTGGGAATGCT
 GATGATCTGCTCCGCCGCCGAGCAGCTGTGGGTACCGTCTACTACGGCGTGCCTGTGTGGAAGGAGGCCA
 CGACCACCTCTTCTGCGCGAGCGACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCAT
 GCTTGCGTGCCTACGGACCCCAACCCCAAGGAGGTGGTGTGGGAAACGTGACCGAGTACTTCAACATGTG
 GAAGAATAACATGGTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCAGTCCCTGAAGCCCTGCG
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 AGCAACGGCTGGACCGGAGAGATTTCGGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCACGACCTCGAT
 CAGAGACAAGGTGCAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATG
 CCACCACCAAGAACAAGACGACGCGTAATTTAGACTCATTCACTGCAACAGCAGCGTCATGACGCAGGCC
 TGGCCCAAGGTGTCTTTCGAACCAATCCCGATCCATTACTGTGCCCCCTGCCGGATTTCGCGATCCTCAAGTG
 TAACAACAAGACCTTCGACGCGGAAGGGCCTGTGCACCAACGTGACACGGTGCAGTGCACCCATGGCATCC
 GCCCCGTCGTGAGCACCCAGCTGCTGTGTAACGGGTCCCTGGCTGAGGAGGAGGTGGTGATCCGGTTCGGAC
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 TAACAACAACACCCGTAAGGGCATCCACATCGGGCCTGGACGGGCTTCTATGCCGCCCGCAAGATCATCG
 GCGACATCCGGCAGGCCCATTGCAACCTCTCCCGCGCCAGTGGAATAACACCCTGAAGCAGATCGTGATC
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 GCGGCACTCCTTCAACTGCGGGGGCGAGTTCTTCTACTGCGATACGACACAGCTCTTCAACTCCACCTGGA
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 CCGCTTTGAGTGAGGGGGCCACTCCTCAGGACCTCAATACAATGCTTAATACCGTGGGCGGCCATCAGGCC
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Fig.30 (Cont).

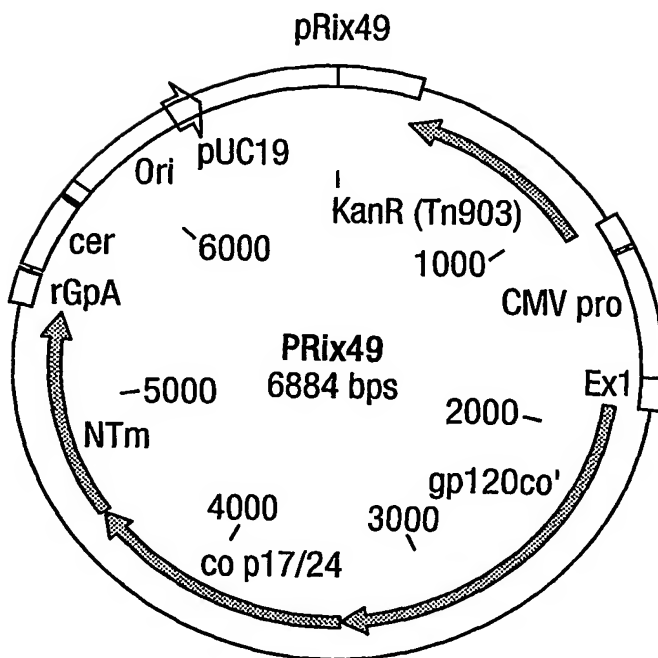
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CAAGGCTACTTCCCTGATTGGCAGAACTACACACCAGGGCCAGGGGTCAGATATCCACTGACCTTTGGATG
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TACACCCTGTGAGCCTGCATGGAATGGATGACCCTGAGAGAGAAGTGTTAGAGTGGAGGTTTGACAGCCGC
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TCCTAGACTAGAGCCCTGGAAGCATCCAGGAAGTCAGCCTAAAACTGCTTGTACCAATTGCTATTGTAAAA
AGTGTGCTTTTCATTGCCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGG
AGACAGCGACGAAGACCTCCTCAAGGCAGTCAGACTCATCAAGTTTCTCTATCAAAGCAACCCACCTCCCA
ATCCAAAGGGGAGCCGACAGGCCCCGAAGGAATAA [SEQ ID NO: 101]

Aminoacid sequence of insert

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ACVPTDPNPQEVVLGNVTEYFNMWKNMVDQMHEDIISLWDQSLKPCVKLTPLCVTLDCDDVNTNSTTTT
SNGWTGEIRKGEIKNCSFNITTSIRDKVQKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQA
CPKVSFEPIPIHYCAPAGFAILKCNKTFDGKGLCTNVSTVQCTHGIRPVVSTQLLLNGSLAEDEVVIRSD
NFMDNTKTIIVQLNESVAINCTRPNNNTRKGIHIGPGRFYAARKIIGDIRQAHCNLSRAQWNNTLQIIVI
KLREHFGNKTIKFNQSSGGDPEIVRHSFNCGGEFFYCDTTQLFNSTWNGTEGNNTTEGNSTITLPCRIKQII
NMWQEVGKAMYAPPIGGQIRCSSNITGLLLTRDGGTEGNNGTENETEIFRPGGGDMRDNRSELYKYKVVKV
EPLGVAPTRAKRRVVQRMGARASVLSGGELDRWEKIRLRPGGKKKYKLKHIVWASRELERFAVNPGLLETS
EGCRQILGQLQPSLQTGSEELRSLYNTVATLYCVHQRIEIKDTKEALDKIEEQNKSKKKAQQAADTGHS
NQVSQNYPIVQNIQGMVHQAI SPRTLNAWVKVVEEKA FSPEVI PMFSALSEGATPQDLN TMLNTVGGHQA
AMQMLKETINEEAAEWDRVHPVHAGPIAPGQMREPRGSDIAGTTSTLQEQIGWMTNNPPIPVGEIYKRWII
LGLNKIVRMYSPSILDIRQGPKEPFRDYVDRFYKTLRAEQASQEVKNWMTETLLVQANANPDCKTILKALG
PAATLEEMMTACQGVGGPGHKARVLMGGKWSKSSVVGWPTVRERMRRAEPAADGVGAASRDLEKHGAI TSS
NTAATNAACAWLEAQEEEEVGFPVTPQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWIYHT
QGYFPDWQNYTPGPGVRYPLTFGWICYKLPVPEPDKVEEANKGENTSLHPVSLHGMDPEREVLEWRFDSR
LAFHHVARELHPEYFKNCTSEPVDPRLPEPWKHPGSQPKTACTNCYCKKCCFHCQVCFITAALGISYGRKKR
RQRRRPPQGSQTHQVSLSKQPTSQSKGEPTGPKE [SEQ ID NO: 102]

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Fig.31.



DNA sequence of insert

ATGAAGGTCAAGGAGACCAGAAAGAACTACCAGCATCTGTGGCGCTGGGGCACCATGCTCCTGGGAATGCT
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 CGACCACCTCTTCTGCGCGAGCGACGCCAAGGCCTACGACACGGAAGTGCATAACGTGTGGGCGACGCAT
 GCTTGCGTGCCCTACGGACCCCAACCCCAAGGAGGTGGTGTCTGGGAAACGTGACCGAGTACTTCAACATGTG
 GAAGAATAACATGGTGGATCAGATGCACGAGGACATCATCTCTGTGGGACCAGTCCCTGAAGCCCTGCG
 TGAAGCTGACGCCTCTCTGCGTGACACTGGACTGTGACGACGTCAACACCACCAACAGCACTACCACCACC
 AGCAACGGCTGGACCGGAGAGATTTCGGAAGGGCGAGATCAAGAACTGCTCCTTCAATATCACGACCTCGAT
 CAGAGACAAGGTGCAGAAGGAATACGCGCTGTTTTATAATCTCGATGTGGTCCCCATCGACGACGACAATG
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 GCGACATCCGGCAGGCCCATTGCAACCTCTCCCGCGCCAGTGGAATAACACCCCTGAAGCAGATCGTGATC
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Fig.31 (Cont).

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CCGGCTGCCACCCTGGAAGAGATGATGACCGCCTGTGAGGGAGTAGGCGGACCCGGACACAAAGCCAGAGT
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CTGAGCCAGCAGCAGATGGGGTGGGAGCAGCATCTGAGACCTGGAACCAAGAGAGGAGGAGGTGGGTTTTCCAGT
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CACACCTCAGGTACCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTAAAAGAAA
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CAAGGCTACTTCCCTGATTGGCAGAACTACACACCAGGGCCAGGGGTCAGATATCCACTGACCTTTGGATG
GTGCTACAAGCTAGTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCGCCT
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CTAGCATTTTCATCACGTGGCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGCACTAGTGAGCCAGTAGA
TCCTAGACTAGAGCCCTGGAAGCATCCAGGAAGTCAGCCTAAACTGCTGTGACCAATTGCTATTGTAAAA
AGTGTGCTTTTCATTGCCAAGTTTGTTCATAACAGCTGCCTTAGGCATCTCCTATGGCAGGAAGAAGCGG
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ATCCAAAGGGGAGCCGACAGGCCCGAAGGAATAA [SEQ ID NO: 103]

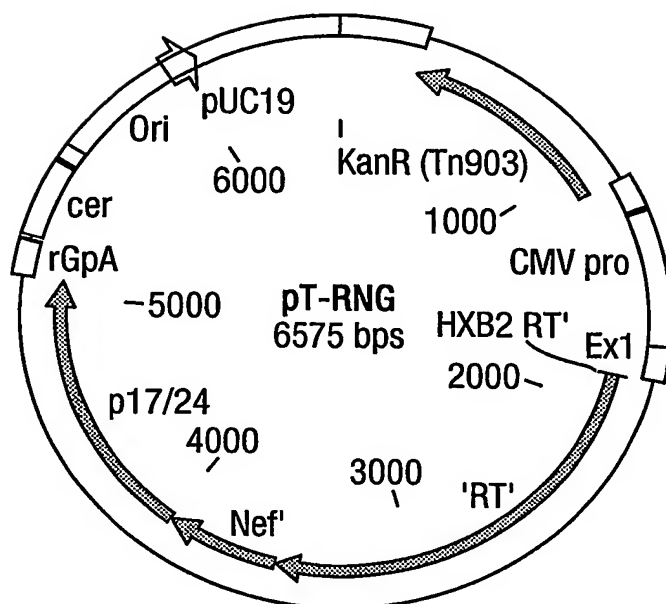
Aminoacid sequence of insert

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SNGWTGEIRKGEIKNCSFNITTSIRDKVQKEYALFYNLDVVPIDDDNATTKNKTTRNFRLIHCNSSVMTQA
CPKVSFEPIPIHYCAPAGFAILKCNKTFDGKGLCTNVSTVQCTHGIRPVVSTQLLNGLSLAEVIRSD
NFMNDTKTIIVQLNESVAINCTRPNNNTRKGIHIGPGRFYAARKIIGDIRQAHCNLSRAQWNNTLQKQIVI
KLREHFGNKTIFKNQSSGGDPEIVRHSFNCGEFFYCDTTQLFNSTWNGTEGNTEGNSTITLPCRIKQII
NMWQEVGKAMYAPPIGGQIRCSSNITGLLLTRDGGTEGNGTENETEIFRPGGDMRDNRSELYKYKVVKV
EPLGVAPTRAKRRVQRMGARASVLSGGELDRWEKIRLRPGGKKYKLKHIVWASRELERFAVNPGLLET
EGCRQILGQLQPSLQTGSEELRSLYNTVATLYCVHQRIEIKDTKEALDKIEEQNKSKKKAQQAADTGHS
NQVSQNYPIVQNIQGMVHQAI SPRTLNAAWKVVEEKAFSPEVIMFSALESEGATPQDLNMTMLNTVGGHQA
AMQMLKETINEEAAEWDRVHPVHAGPIAPGQMREPRGSDIAGTTSTLQEQIGWMTNNPPIPVGEIYKRWII
LGLNKIVRMYSPTSILDIRQGPKEPFRDYVDRFYKTLRAEQASQEVKNWMTETLLVQANANPDCKTILKALG
PAATLEEMMTACQGVGGPGHKARVLMGGKWSKSSVVGWPTVRERMRAEPAADGVGAASRDLEKHGAITSS
NTAATNAACAWLEAQEEEEVGFPVTPQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWYHT
QGYFPDWQNYTPGPGVRYPLTFGWCYKLPVPEPKDVEEANKGENTSALHPVSLHGMDDPEREVLEWRFRDSR
LAFHHVARELHPEYFKNCTSEPVDPRLEPWKHPGSQPKTACTNCYCKKCCFHCQVCFITAAALGISYGRKKR
RQRRRPPQGSQTHQVSLSKQPTSQSKGEPTGPKE [SEQ ID NO: 104]

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Fig.32.

pT-RNG



DNA sequence of insert:

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 AGATCAGCAAGATCGGGCCTGAGAACCATAACAACCCCCGTGTTTGCCATCAAGAAGAAGGACAGCACC
 AAGTGGCGCAAGCTGGTGGATTTCCGGGAGCTGAATAAGCGGACCCAGGATTTCTGGGAGGTCCAGCTGGG
 CATCCCCCATCCGGCCGGCCTGAAGAAGAAGAAGAGCGTGACCGTGCTGGACGTGGGCGACGCTTACTTCA
 GCGTCCCTCTGGACGAGGACTTTAGAAAGTACACCGCCTTACCATCCCATCTATCAACAACGAGACCCCT
 GGCATCAGATATCAGTACAACGTCTCCCCAGGGCTGGAAGGGCTCTCCCGCCATTTTCCAGAGCTCCAT
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 GGGGGGACTGGAAGGGCTAATTAAGTCCCAAGAAGACAAGATATCCTTGATCTGTGGATCTACCACACAC
 AAGGCTACTTCCCTGATTGGCAGAACTACACACCAGGGCCAGGGGTGAGATATCCACTGACCTTTGGATGG
 TGCTACAAGCTAGTACCAGTTGAGCCAGATAAGGTAGAAGAGGCCAATAAAGGAGAGAACACCAGCTTGT

Fig.32 (Cont).

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TAGCATTTCATCACGTGGCCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGCATGGGTGCCCCGAGCTTCG
GTACTGTCTGGTGGAGAGCTGGACAGATGGGAGAAAATTAGGCTGCGCCCCGGGAGGCAAAAAGAAATACAA
GCTCAAGCATATCGTGTGGGCCTCGAGGGAGCTTGAACGGTTTGCCGTGAACCCAGGCCTGCTGGAAACAT
CTGAGGGATGTCGCCAGATCCTGGGGCAATTGCAGCCATCCCTCCAGACCGGGAGTGAAGAGCTGAGGTCC
TTGTATAACACAGTGGCTACCCTCTACTGCGTACACCAGAGGATCGAGATTAAGGATACCAAGGAGGCCTT
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GCAACCAGGTATCACAGAACTATCCTATTGTCCAAAACATTACAGGGCCAGATGGTTCATCAGGCCATCAGC
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CTCCGCTTTGAGTGAGGGGGCCACTCCTCAGGACCTCAATACAATGCTTAATACCGTGGGCGGCCATCAGG
CCGCCATGCAATGTTGAAGGAGACTATCAACGAGGAGGCAGCCGAGTGGGACAGAGTGCATCCCGTCCAC
GCTGGCCCAATCGCGCCCGACAGATGCGGGAGCCTCGCGGCTCTGACATTGCCGGCACCACCTCTACACT
GCAAGAGCAAATCGGATGGATGACCAACAATCCTCCCATCCCAGTTGGAGAAATCTATAAACGGTGGATCA
TCCTGGGCCTGAACAAGATCGTGCGCATGTACTCTCCGACATCCATCCTTGACATTAGACAGGGACCCAAA
GAGCCTTTTAGGGATTACGTGACCGGTTTTTATAAGACCCTGCGAGCAGAGCAGGCCTCTCAGGAGGTCAA
AAACTGGATGACGGAGACACTCCTGGTACAGAACGCTAACCCCGACTGCAAAACAATCTTGAAGGCACTAG
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GTGTTGTAA [SEQ ID NO: 88]

Amino acid sequence of insert:

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GIRYQYNVLPQGWKGSPAIFQSSMTKILEPFRKQNPDIVIYQYMDLYVGSLEIGQHRTKIEELRQHLLR
WGLTTPDKKHQKEPPFLKMGYELHPDKWTVPVLPKDSWTVNDIQKLVGKLNWASQIYPGIKVRQLCKL
LRGFKALTEVIPLTEEALELAENREILKEPVHGVYDPSKDLIAEIQKQGQGWYQIYQEPFKNLKTGK
YARMRGAHTNDVKQLTEAVQKITTESIVIWGKTPKFKLPIQKETWETWWTEYWQATWIPWEFVNTPLVK
LWYQLEKEPIVGAETFYVDGAANRETKLGKAGYVTNRGRQKVVTLDTTNQTTELQAIYALQDSGLEVNI
VTDSQYALGIIQAQPDQSESELVNQIIIEQLIKKEKVYLAWVPAHKGIGGNEQVDKLVSAGIRKVLVGVFPV
TPQVPLRPMTYKAAVDLSHFLKEKGGLEGLIHSQRRQDILDWYHTQGYFPDWQNYTPGPGVRYPLTFGW
CYKLVPVEPKVVEANKGENTSLHPVSLHGMDPEREVLEWRFD SRLAFHHVARELHPEYFKNCMGARAS
VLSGELDRWEKIRLRPGGKKKYKLKHIVWASRELERFAVNPLLETSEGCRQILGQLQPSLOTGSEELRS
LYNTVATLYCVHQRIEIKDTKEALDKIEEEQNKSKKKAQQAADTGHSNQVSQNYPIVQNIQGQMVHQAI
PRTLNAWVKVVEEKAFSPFVIMFSALEGATPQDLNLTMLNTVGGHQAAMQMLKETINEEAAEWDVHPVH
AGPIAPGQMRPRGSDIAGTTSTLQEIQGWMNTNPPPIPVGEIYKRWIILGLNKIVRMYSPTSILDIRQGP
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VL [SEQ ID NO: 89]

Fig. 33.

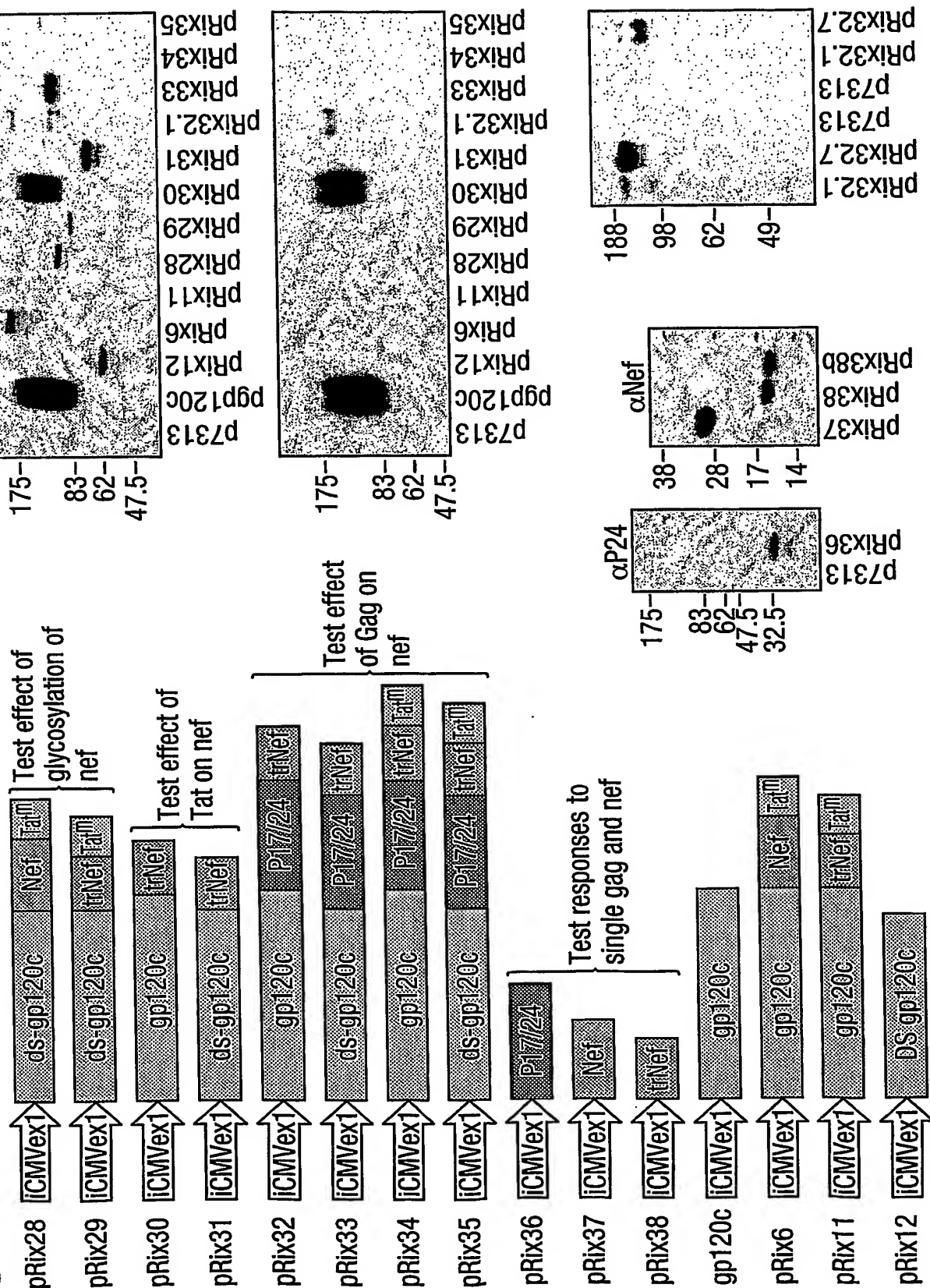


Fig.34.

A Schematic representation of further constructs

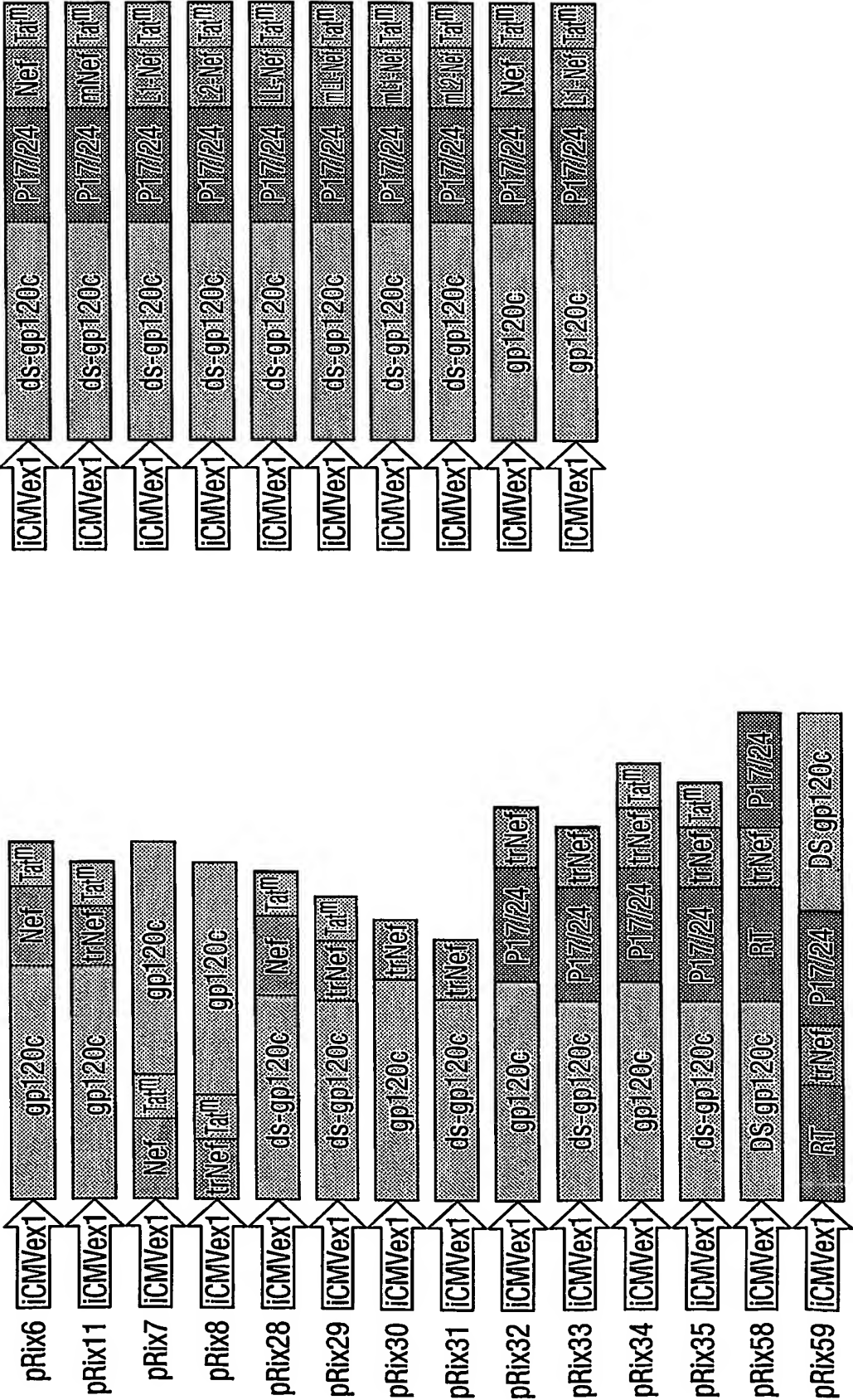
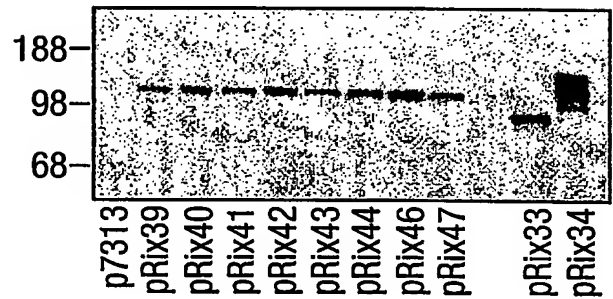
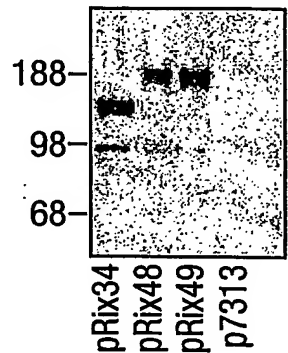


Fig.35.

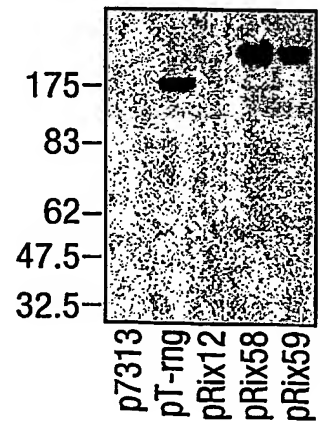
Expression data (anti-Nef) for dsgrp120/Gag/Nef/Tat fusions with mutations in Nef (pRix40-47)



Expression data (anti-Nef) for dsgrp120/Gag/Nef/Tat fusions with glycosylated gp120 (pRix48 and pRix49)



Expression data (anti-Nef) for the quadrivalent fusion proteins containing RT, Nef, Gag and dsgrp120, compared to expression of the RT,Nef,Gag fusion alone



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Fig.36.

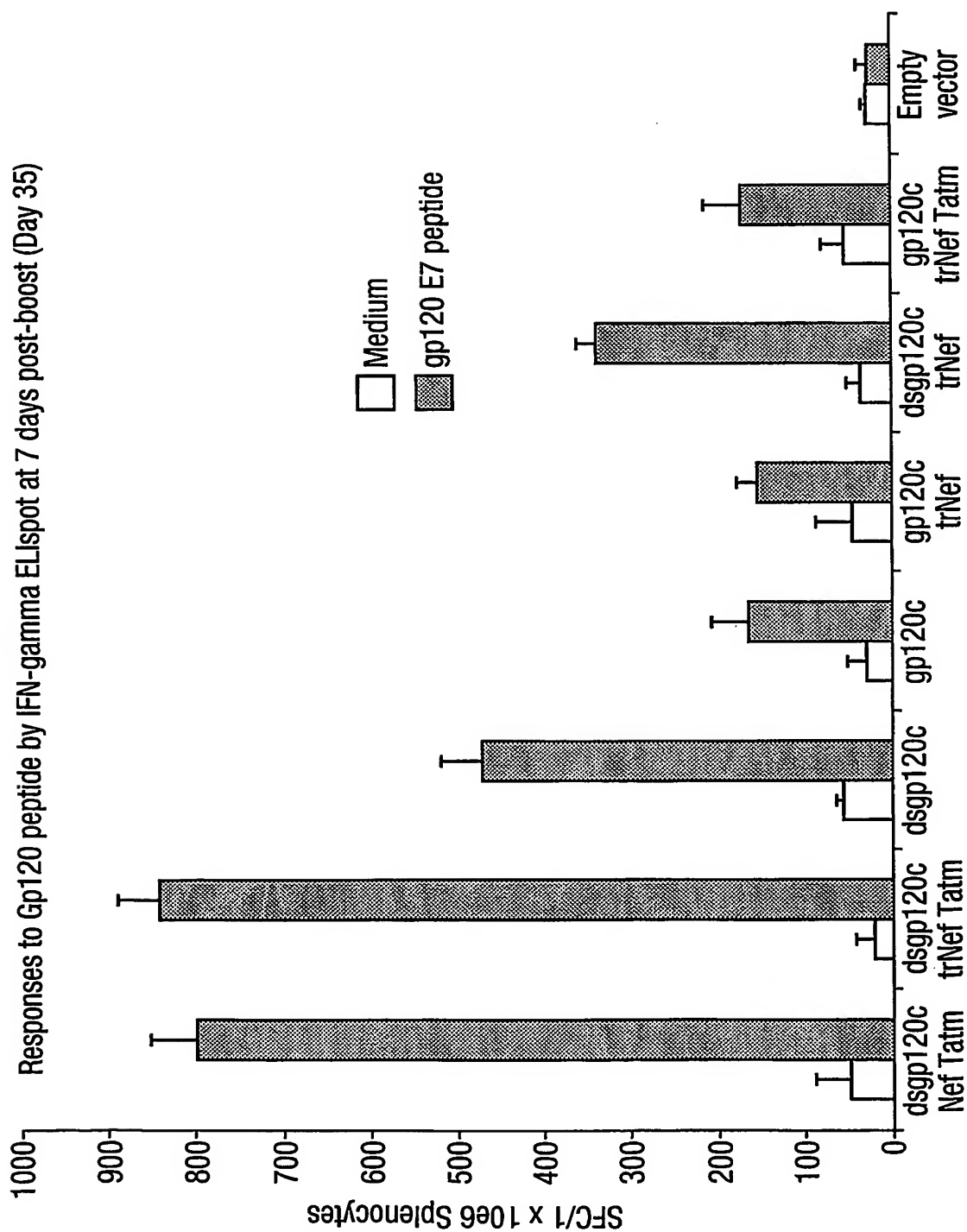


Fig.37.

Responses to gp120 peptide by IFN-gamma ELISpot at 7 days-boost (Day 35)

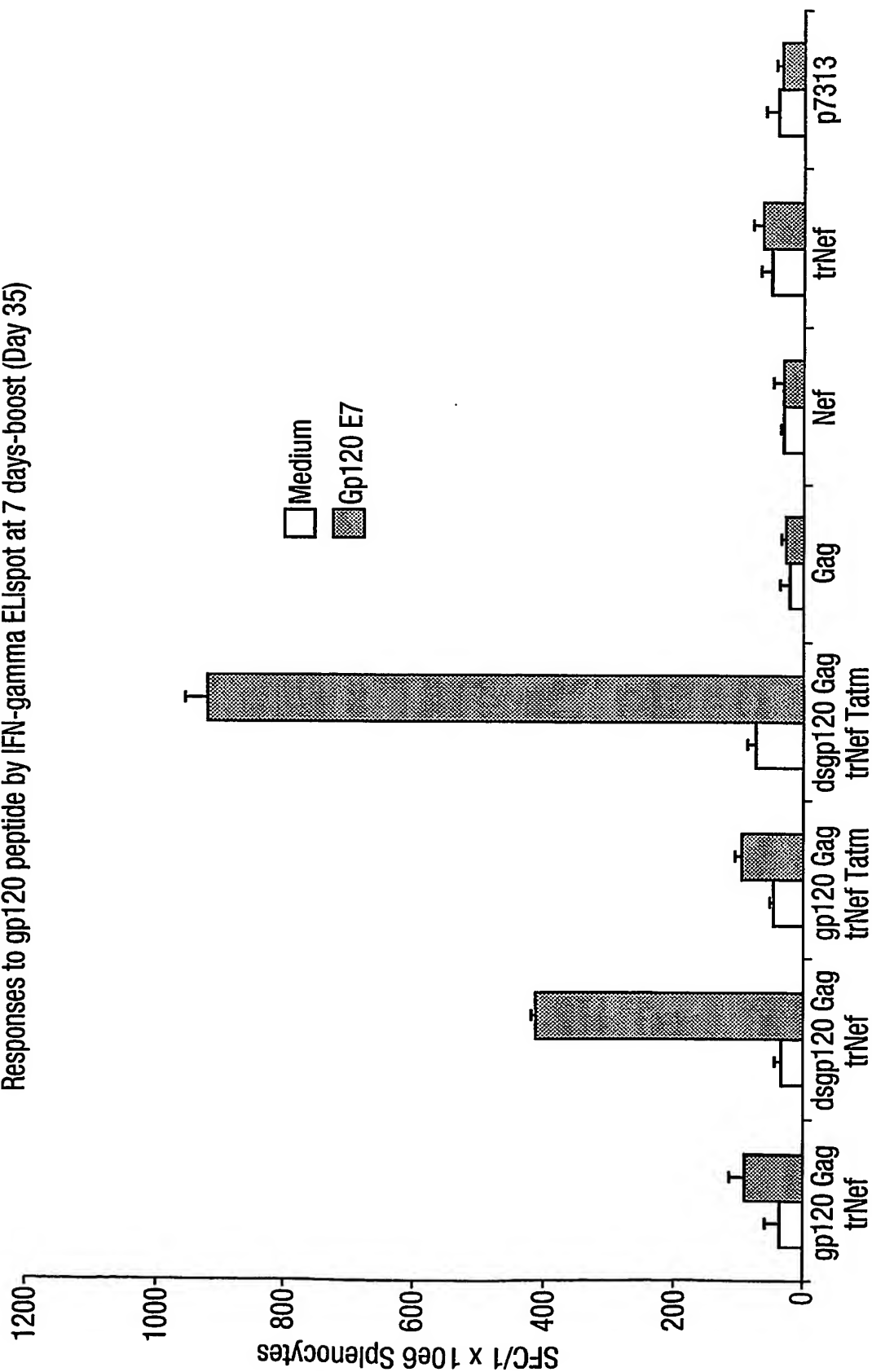


Fig.38.

Response to in vitro restimulation with Gp120, Gag and RT peptides at 7 days post-boost (Day 35) using IFN-gamma ELISPOT

